



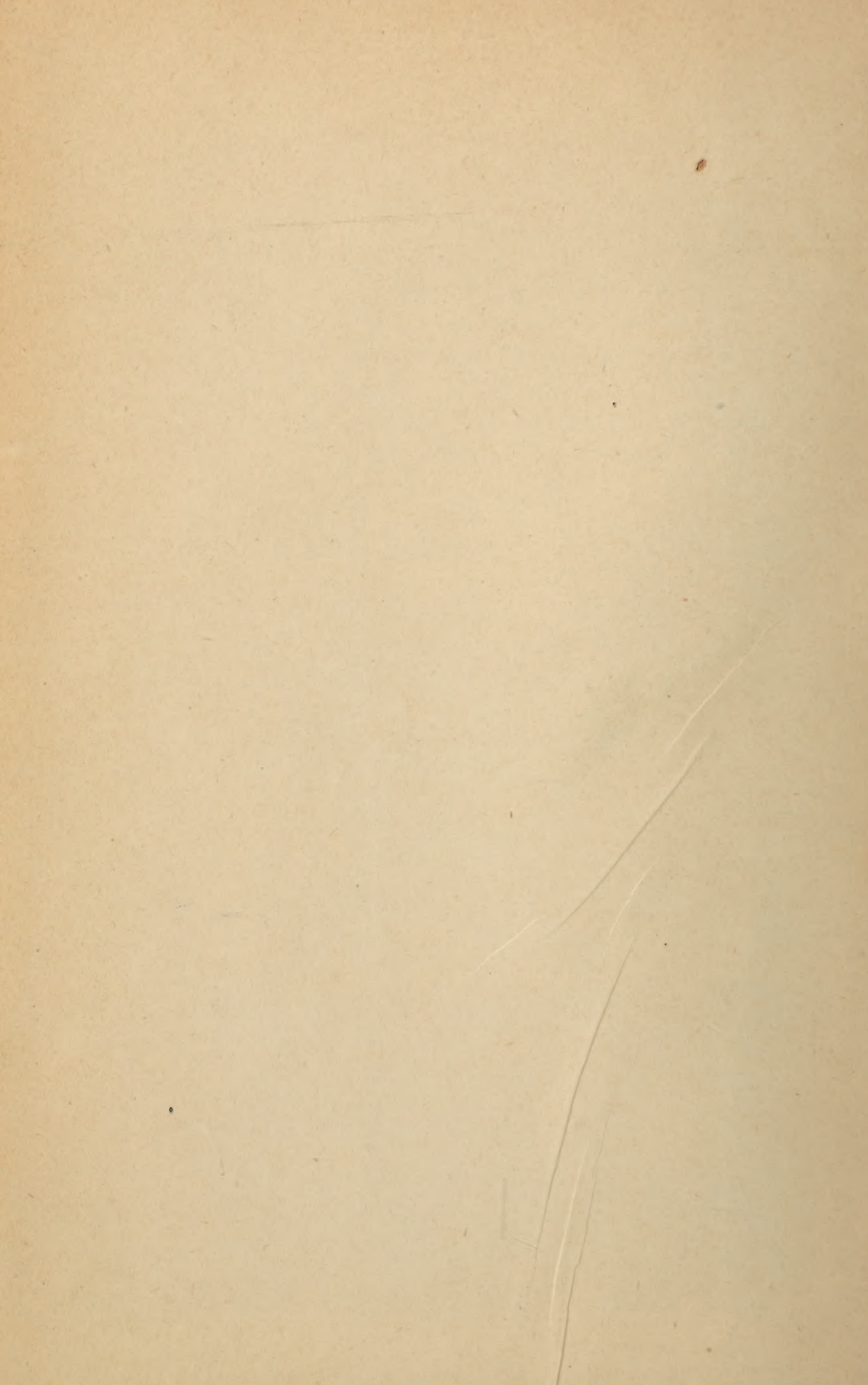
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The New Standard Formulary

COMPRISING IN PART I ALL PREPARATIONS
OFFICIAL OR INCLUDED IN THE PHARMA-
COPOEIAS, DISPENSATORIES OR FORMULAR-
IES OF THE WORLD, TOGETHER WITH A VAST
COLLECTION FROM OTHER SOURCES. :: ::

THE PARTS FOLLOWING EMBRACING DOMES-
TIC AND VETERINARY REMEDIES, PROPRI-
ETARY AND SYNTHETIC REMEDIES, PERFUMES
AND TOILET ARTICLES, SODA AND OTHER
BEVERAGES AND DOMESTIC UTILITIES. :: ::

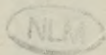
BY
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CHICAGO:
G. P. ENGELHARD & COMPANY,
1910

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THE NEW STANDARD FORMULARY

THE VARIOUS PARTS ISSUED IN
SEPARATE VOLUMES AS FOLLOWS:

- VOLUME 1. PHARMACEUTICAL PREPARATIONS
- VOLUME 2. DOMESTIC AND VETERINARY REMEDIES
- VOLUME 3. PROPRIETARY AND SYNTHETIC REMEDIES
- VOLUME 4. PERFUMES AND TOILET ARTICLES
- VOLUME 5. DOMESTIC UTILITIES
- VOLUME 6. SODA AND OTHER BEVERAGES

P R E F A C E

The original Standard Formulary has been so extensively revised and greatly enlarged that the present edition is more than double the former size.

The first part contains a vast collection of so-called pharmaceutical or galenical preparations. It includes all the formulas of the United States Pharmacopeia, the National Formulary, the Eclectic Dispensatory, the Homeopathic Pharmacopeia, the Cincinnati Academy of Pharmacy, the British Pharmacopeia, the British Formulary, the German Pharmacopeia, the Thomsonian preparations, Rademacher's preparations, and Kneipp's remedies; also many from the Austrian Pharmacopeia, the German Formulary, the Swedish, Danish and Norwegian Pharmacopeias, the French Codex, from formularies of several American hospitals, and of the London Throat Hospital; also the best afforded by Hager's and Dietrich's manuals, as well as many other formulas which are considered practical and useful and have received the sanction of good authority. In this part are included formulas for articles of surgical use, such as medicated cottons, gauzes, ligatures, etc., also dermatic varnishes and pastes, and many of Unna's and Lassar's preparations.

Part II includes the vast array of preparations for Domestic and Veterinary use which pharmacists are expected to keep put up ready for counter sale. Whatever information regarding diseased conditions is necessary to enable the pharmacist to make intelligent selections from the formulas here offered is also included.

Part III includes the so-called patent medicines, the pharmaceutical preparations, and the synthetic remedies. These three classes, while not similar, frequently bear similar titles, and are for this reason, more appropriately placed together than in separate divisions. The arrangement is entirely alphabetical.

Part IV is a comprehensive treatise on perfumes and toilet articles. A great deal of attention is paid to the chemistry of volatile oils, the isolated principles of these oils, and the various synthetics used in the manufacture of perfumery products. As many reliable formulas as possible, mentioning these synthetics, for perfumery articles, are included.

Part V contains a choice collection of formulas from the Manual of Soda and Other Beverages.

Part VI includes all remaining formulas which will prove of service to the pharmacist, such as shoe blackings, inks, polishes, and everything else of whatsoever nature the druggist deals or wishes to know about. This part is therefore not the least useful of all.

Whenever possible, the formulas in the different parts have been arranged in alphabetical order. A copious index is also provided.

All information that has ever been furnished in the pamphlets and treatises by the various departments at Washington, particularly the Department of Agriculture, has been utilized to the fullest possible extent in this book. A large amount of valuable information has been derived from this source.

Attention is called to the completeness of the various introductions to each primary topic.

The quantities of all formulas have been adapted to the usual needs of retail pharmacists, these quantities being such even amounts as a pint, half-gallon, gallon, etc.

Formulas taken from foreign sources have been recast so as to eliminate the weighing of liquids and to reduce or change the amounts to these even quantities.

Owing to the greater familiarity of druggists in this country with the avoirdupois system of weights, troy weights and the metric system have been discarded.

The reformed spelling has been adopted in designating chemical names, such as iodin for iodine, sulfur for sulphur, chlorid for chloride, sulfid for sulphide, etc.

A. E. HISS.

PART I.

PHARMACEUTICAL PREPARATIONS

Abstracts.

These preparations were introduced into the United States Pharmacopeia of 1880, but were dropped from the edition of 1890. They are still used to some extent; the following is a general process for their manufacture:

Drug, No. 60 powder.....av.oz. 8
Menstruum,
Powdered sugar of milk, each..
..... sufficient

Moisten the drug with menstruum, and pack, macerate, and extract in the usual way for making fluid extracts, reserving the first 6¼ fluidounces of percolate obtained and continuing percolation until the drug is exhausted. Evaporate the second percolate, at a temperature not exceeding 50 degrees C., to 1¼ fluidounces; mix this with the reserve percolate, place the whole in a broad evaporating dish or other suitable vessel; add 4 av. ounces of milk sugar, mix well, cover the vessel with a piece of thin muslin gauze to exclude dust, and set the whole aside in a warm place, where the temperature will not rise above 50 degrees C., until the mixture is dry. Then add enough milk sugar to make the whole weigh 4 av. ounces, reduce the whole to a uniform fine powder, and keep in a well-stoppered bottle.

Essentially, therefore, the process of manufacture consists in making a fluid extract, evaporating this to a dry solid extract, and adding enough milk sugar to make up a quantity of one-half of the weight of the original drug.

Eleven abstracts were official, viz., aconite, belladonna (root), conium (fruit), digitalis, henbane (leaves), ignatia, jalap, nux vomica, podophyllum, senega and valerian. The menstruum usually employed in extracting the drugs was alcohol, the exceptions being nux vom-

ica and ignatia, in which the menstruum was a mixture of alcohol and water in the proportion of eight of the former to one of the latter, and conium, in which the first four fluidounces of alcohol used as menstruum is mixed with three fluidrams of diluted hydrochloric acid.

Abernethy's Remedies.

Abernethy was a celebrated English physician who placed great reliance on the mercury treatment, his favorite prescription being a 5-grain blue mass pill at night, to be followed by 1 to 1½ fluidounces of black draught (compound infusion of senna).

The composition of the pill was changed subsequently but was finally settled at 3 gr. of blue mass with 2 gr. of compound extract of colocynth. This is what should be given when Abernethy's pills are demanded, although sometimes a 5-gr. pill composed of 2 parts of compound extract of colocynth and 1 part of blue mass is used.

This is also used as Abernethy's pill:

Socotrine aloes.....gr. 2
Extract of henbane.....gr. 2
Blue massgr. 1
Ipecacgr. 5/6

Acid, Acetic, Diluted.

Acetic acid.....av.oz. 1

Distilled water.....av.oz. 5

Both ingredients are to be weighed.

The acid employed should be of the U. S. P. strength, viz., 36 per cent. of absolute acid. A weaker acid may be used as well as a stronger one, in the one case using less water for dilution, in the other more, so that the product contains 6 per cent. of absolute acid.—U. S. P.

Acid, Carbolic, Liquefied.

Liquefy the acid by placing the unstoppered container in a water bath and heat gradually until the crystals are

melted; transfer the liquid to a tared vessel and weigh, and to every 9 parts by weight add one part of distilled water, and mix thoroughly.—U. S. P.

The liquefied acid of the Germ. Pharm. differs from this only in being made from 10 parts of acid to one part of water.

Acid, Carbolic, No. 33.

This is a dilution of carbolic acid recommended by the Cleveland Pharmaceutical Association as more convenient and safe to use than liquefied carbolic acid, i.e., crystal carbolic acid melted and maintained in a liquid state by the addition of 5 per cent. of water, alcohol, or glycerin. It was directed to be prepared as follows:

Carbolic acid, crystal. .

..... av.oz. 2 or fl.oz. 2

Glycerinav.oz. 5 or fl.oz. 4

Melt the acid and add the glycerin.

This No. 33 acid mixes readily with water in all proportions, and, not being as caustic as the ordinary liquefied acid, cannot result in as much mischief or fatality if used improperly, or if taken accidentally or purposely.

In Chicago the sale of a 33 1/3 per cent. acid consisting of equal parts of liquefied carbolic acid, alcohol and glycerin is permitted by a city ordinance.

Acid, Carbolic, Camphorated. (Phenol Camphor.—Carbolized Camphor.—Camphorated Phenol.)

Camphor, coarse powder..av.oz. 10

Carbolic acid, crystal.....av.oz. 3 1/2

Alcoholfl.oz. 1/2

Triturate together until an oily liquid is obtained, or mix in a bottle and agitate frequently until solution occurs.

Acid, Carbolic, Iodized. (Phenol Iodatum.—Iodoized Phenol.)

Iodin, reduced to powder..av.oz. 1

Glycerinav.oz. 3

Carbolic acid.....av.oz. 1

Put the iodine into a flask, add the acid, previously melted, then the glycerin, and digest the mixture at a gentle heat, frequently agitating, until the iodine is dissolved.

Keep the product in glass-stoppered vials, in a dark place.

The above is used as a local application in uterine and skin diseases. A modified form is the so-called carbolate of iodine inhalant.—N. F.

Acid, Hydrobromic, Diluted.

This preparation is recognized by the U. S. P. which, however, gives no process for it. It may be prepared as follows:

Potassium bromid.....av.oz. .3

Tartaric acid.....av.oz. 3 3/4

Distilled water.....fl.oz. 16

Dissolve the salt and acid each separately in 8 fluidounces of water, then mix the solutions, put the mixture in a cold place, preferably on ice, for about 12 hours, then decant the clear liquid, and filter it.

The product contains 10 per cent. of absolute hydrobromic acid. There is also some cream of tartar which is objectionable in most instances but at times may interfere with its usefulness. A superior product is obtained by Squibb's process, the mixing of solution of potassium bromid and sulfuric acid, allowing the potassium sulfate to crystallize out, and then distilling.

The product should be kept in glass-stoppered bottles, protected from light.

Acid, Hydrochloric, Diluted. (Diluted Muriatic Acid.)

Hydrochloric acid.....fl.oz. 4 1/2

Distilled water.....fl.oz. 11 1/2

Or mix in the proportion of 5 av. ounces and 11 av. ounces.—U. S. P.

Keep in glass-stoppered bottles.

The acid used for the above should be a c. p. article corresponding in strength to the U. S. P. If weaker, more of it or proportionately less water should be employed. The diluted acid should contain 10 per cent. by weight of absolute acid.

Acid, Hydrocyanic, Diluted. (Prussic Acid.)

I.

The U. S. P. directs that it may be prepared extemporaneously as follows:

Silver cyanid.....gr. 54
 Diluted hydrochloric acid...fl.dr. 2½
 Distilled water.....fl.dr. 7

Mix the acid and water, add the silver cyanid and shake the whole together in a glass-stoppered bottle. When the precipitate has subsided, pour off the clear liquid.

The product contains not less than 2 per cent. by weight of absolute acid. The acid of the Brit. Pharm. is of the same strength. The Germ. Pharm. does not recognize it at all.

This preparation should be kept in small, dark amber-colored, cork-stoppered bottles in a cool place.

The U. S. P. 1890 gave another more elaborate process for this preparation, which is here given.

II.

Potassium ferrocyanid, coarse powdergr. 300
 Sulfuric acid.....fl.dr. 2
 Waterfl.dr. 17
 Distilled water, sufficient.

Place the potassium salt in a tubulated retort and add to it 10 fluidrams of water. Connect the neck of the retort (which is to be directed upward) by means of a bent tube with a well-cooled condenser, the delivery tube of which terminates in a receiver, surrounded by ice-cold water, containing 17 fluidrams of distilled water. All the joints of the apparatus, with exception of the neck of the receiver, having been made airtight by means of well-fitting corks, pour into the retort through the tubulure the sulfuric acid previously diluted with 6½ fluidrams of water. Gently mix the contents of the retort, and then heat it in a sand bath so as to keep the liquid in brisk ebullition until about one-half of its volume has passed into the receiver. Detach the receiver and assay a small portion of the contents by the method given below. Then add to the remainder so much distilled water as may be required to bring the product to the strength of 2 per cent. by weight of absolute acid.

The sulfuric acid used must be of U. S. P. quality, i. e., of 98 per cent. strength, free from arsenic, etc. If weaker than 98 per cent., more of it must be used and correspondingly less water.

The assay process for the above is as follows: Mix in a flask, about 100 c. c. capacity, 0.27 gm. of the distillate with sufficient distilled water and light magnesia to make an opaque mixture of about 10 c. c. Add to this 2 or 3 drops of potassium chromate test solution U. S. P., and then from a burette silver nitrate decinormal volumetric solution until a red tint is produced which does not again disappear on shaking. Each c. c. of silver solution used indicates 1 per cent of absolute hydrocyanic acid.

Acid, Hydrocyanic, Scheele's.

This is to be prepared from potassium ferrocyanid and sulfuric acid according to the process of the U. S. P., but increasing the quantity of the ingredients proportionately. It should contain 4 per cent. of absolute hydrocyanic acid.—Brit. Form.

Acid, Hydrofluoric, Diluted.

This is to contain 1/5 per cent. of absolute hydrofluoric acid.—Brit. Form.

Acid, Hypophosphorous.

According to the U. S. P., this contains 30 per cent. by weight of absolute hypophosphorous acid and 70 per cent. of water. The U. S. P. gives no process for making it but one is given by the new N. F. and the Brit. Form., both of which are here given:

I.

Potassium hypophosphite..av.oz. 9
 Tartaric acid.....av.oz. 12¾
 Diluted alcohol.
 Distilled water, each, sufficient.

Dissolve the potassium salt in 9 fluidounces of water, previously warmed and the tartaric acid in 17 fluidounces of diluted alcohol. Mix the solutions in a flask of sufficient capacity to permit agitation, cork and shake well, and set the flask in a bath of ice water for 12

hours. Then carefully pour the mixture into a funnel, the neck of which has been closed with a pledget of cotton, and when all the liquid has drained off, rinse the flask and wash the crystalline precipitate in the funnel with small portions of cold diluted alcohol until the washings no longer respond to the tests for hypophosphorous acid (black precipitate with silver nitrate or white precipitate with mercuric chlorid). Mix the original filtrate and the washings, and evaporate the whole on a water bath at a temperature not exceeding 60 degrees C. until all the alcohol has been dissipated. Allow the liquid to cool and add enough distilled water to make the product weigh 18 av. ounces. This measures about 16 fluidounces.—N. F.

It should be preserved in well-stoppered bottles.

II.

Barium hypophosphite, containing not less than 95 p. c.

Ba. ($H_2 P O_3$)₂av.oz. 8
Diluted sulfuric acid,
Distilled water, each, sufficient.

Dissolve the barium salt in 36 fluidounces of hot distilled water, add 22½ fluidounces of diluted sulfuric acid, after which continue the addition of more acid, drop by drop, until no further turbidity is produced. Set aside in a warm place and filter the clear liquid. Wash the precipitate by decantation with successive portions of water until the washings are no longer acid, filter, unite the filtrates, and evaporate the combined liquid on a water bath until it has the sp. gr. of 1.1367.—Brit. Form.

The product will weigh about 11½ av. ounces and contain 30 per cent. of absolute acid.

Acid, Hypophosphorous, Diluted.

According to the U. S. P. this preparation contains 10 per cent. by weight of absolute hypophosphorous acid and is directed to be made by maxing 1 part by weight of the 30 per cent. acid with 2 parts of distilled water.

Acid, Metaphosphoric, Diluted. (Diluted Glacial Phosphoric Acid.)

Phosphoric acid, glacial.....gr. 365
Distilled water, to make...fl.oz. 8

Dissolve the acid in the water, without heat.

This preparation should be kept in a cool and dark place, and should not be prepared in larger quantity than may be consumed within a few months.

The resulting product contains about 10 per cent. of metaphosphoric acid, provided the glacial acid was free from impurities. That which is sold in form of glassy lumps is usually of sufficient purity. The variety in form of round sticks is more or less impure, containing generally more than 15 per cent. of sodium phosphate. If this variety is alone available, a proportionately larger quantity must be taken, to be determined, if time permits, by an assay of the free acid present. If no special accuracy is required, about 420 grains of this variety of the acid may be reckoned to be equivalent to the quantity directed in the above given formula.

Whenever iron pyrophosphate (U. S. P. or scale) forms one of the ingredients of a mixture containing diluted phosphoric acid, the official tribasic acid is unsuitable, as it produces with the salt a gelatinous precipitate. If a clear mixture is required, the above preparation is to be used in place of the official. The same may be done when iron phosphate (U. S. P. or scale) is prescribed, though the precipitate caused by the official acid in this case is not as bulky, and under certain conditions may not form at all. It must also be remembered, however, that the glacial acid is itself incompatible with certain other substances.—N. F.

Acid, Nitric, Diluted.

Nitric acid.....fl.oz. 1½
Distilled water.....fl.oz. 12½

Or mix in the proportion of 2½ av. ounces and 14½ av. ounces.

Keep in dark amber-colored glass-stoppered bottles.

The acid should be of U. S. P. quality and strength; if weaker, more should be employed and correspondingly less water. The product should contain 10 per cent. by weight of absolute acid.—U. S. P.

Acid, Nitrohydrochloric. (Nitromuriatic Acid.—Aqua Regia.)

Nitric acid, U. S. P.fl.dr. 3
Hydrochloric acid, U. S. P.fl.dr. 13¾

Mix the acids in a capacious glass vessel and, when effervescence has ceased, transfer the product to dark amber-colored, glass-stoppered bottles which should not be more than half filled and keep them in a cool place.—U. S. P.

Acid, Nitrohydrochloric, Diluted. (Diluted Nitromuriatic Acid.)

Nitric acidfl.dr. 5¼
Hydrochloric acidfl.oz. 3
Distilled waterfl.oz. 13

Mix the acids in a capacious glass vessel and, when effervescence has ceased, add the water. Keep the product in dark amber-colored, glass-stoppered bottles in a cool place.

The acids should be of the U. S. P. quality and strength, viz., nitric acid 68 per cent. of absolute acid and the hydrochloric acid 31.9 per cent. If somewhat weaker acids be at hand, more must be employed and a proportionately smaller amount of water.—U. S. P.

Acid, Phosphoric, Diluted.

Phosphoric acidfl.dr. 9
Water, distilledfl.oz. 14½

Or mix in the proportion of 2 av. ounces and 15 av. ounces.

Keep in well-stoppered bottles.

The phosphoric acid of the U. S. P. contains 85 per cent. of absolute acid. If a weaker acid be employed, more of it must be used, and correspondingly less water. A 50 per cent. acid is quite common; this may be used in the proportion of 2 fluidounces of acid and 10¾ fluidounces of water, or 1 av. ounce and 4 av. ounces.

The diluted acid should contain 10 per cent. of absolute acid.—U. S. P.

Acid, Sulfuric, Aromatic. (Elixir of Vitriol. — Tinctura Aromatica Acida.)

Sulfuric acidfl.dr. 14
Tincture of gingerfl.dr. 6¼
Oil of cinnamon,
.....m. 8 or about drops 12
Alcoholto make fl.oz. 16

Add the sulfuric acid gradually and with great caution to 11½ fluidounces of alcohol and allow the mixture to cool. Then add to it the tincture and oil and then enough alcohol to make 16 fluidounces.—U. S. P.

Preserve in glass-stoppered bottles.

The product contains 20 per cent. of absolute acid by weight providing full strength acid, 92½ per cent., was used in making it.

The preparation of the Brit. Pharm. contains about 15 per cent. of absolute acid, that of the 1st Germ. Pharm. (not mentioned in later editions) contained about 4 per cent. of absolute acid.

Acid, Sulfurous.

Sulfuric acidfl.oz. 2
Wood charcoal, coarse powder
.....gr. 300
Distilled waterfl.oz. 16

Introduce the charcoal into a glass flask having a capacity of about 16 fluidounces, add the acid, and mix well. Connect the flask by means of bent glass tubing, about 20 inches long, with a wash bottle having a capacity of about 8 fluidounces, containing about 2 fluidounces of water, so that the end of the inlet tube shall be below the surface of the water. Through the triply perforated rubber stopper of the wash bottle pass a safety tube, which should reach nearly to the bottom of the bottle, and connect the latter by means of glass tubing with a bottle provided with a doubly perforated rubber stopper, having a capacity of about 32 fluidounces and containing 16 fluidounces of well-cooled distilled water. The inlet tube should dip about 1 inch below the surface of the distilled water. By means of a second tube connect this bottle with another containing water, the end of the

tube extending 2 inches below the surface of the water. Having ascertained that all the connections are air-tight, apply a moderate heat to the flask containing the acid and charcoal, until the evolution of gas has nearly ceased, and during the passage of the gas, keep the bottle containing the distilled water at or below 10 degrees C. by surrounding it with cold water or ice. Assay a small portion of the sulfurous acid by the method given below. Then add to the remainder enough distilled water to bring the product to the strength of 6.4 per cent by weight of sulfur dioxid.

Finally pour the sulfurous acid into dark amber-colored, glass-stoppered bottles which should be completely filled, and kept in a cool place, protected from light.—U. S. P.

Owing to its rapid deterioration, sulfurous acid should be frequently assayed, and none should be dispensed if it fails to conform to the assay given below.

The wash bottle retains the sulfuric acid which is carried over mechanically, also some of the sulfur dioxid, while the distilled water in the receiving bottle becomes a saturated solution of the sulfur dioxid, probably containing also some carbon dioxid.

The sulfuric acid used for this preparation should be chemically pure but need not be U. S. P. strength, as low as a 75 per cent. acid serving the purpose but somewhat more of it should be employed.

This preparation may also be made by heating together metallic copper with sulfuric acid, copper sulfate and sulfur dioxid being formed.

The U. S. P. describes the preparation as an aqueous solution containing not less than 6 per cent. by weight of sulfur dioxid, but the strength mentioned in the assay is 6.4 per cent.

Assay Process: Introduce into a stoppered weighing-bottle 2 c. c. of sulfurous acid and weigh accurately. To this add 50 c. c. tenth-normal volumetric

solution of iodine and allow it to stand for 5 minutes, then slowly add tenth-normal volumetric solution of sodium thiosulfate until the mixture is just decolorized. Subtract the number of c. c. of the sodium thiosulfate solution used from 50, and multiply the difference by 0.318 and divide this product by the weight of the acid taken: the quotient represents the percentage of absolute sulfurous acid in the latter.

Alcohol.

Alcohol, meaning thereby ethyl alcohol, is used in different strengths, some of these strengths having received specific titles and are recognized authoritatively.

Alcohol (U. S. P.).—This contains 92.3 per cent. by weight or 94.9 per cent. by volume of absolute alcohol and has a specific gravity at 60 degrees F. of 0.816 or at 77 degrees F. of 0.809.

Diluted Alcohol (U. S. P.).—This may be made by mixing equal volumes of alcohol and distilled water, or by mixing the alcohol and water in the proportions of 41 and 50 by weight. The product contains about 41.5 per cent. by weight or about 48.9 per cent. by volume of absolute alcohol, the apparent discrepancy in strength being due to contraction in volume which occurs when alcohol and water are mixed, 20 volumes of alcohol mixed with the same measure of water forming but about 39 volumes of mixture.

Absolute Alcohol (U. S. P. and Brit. Pharm.).—This should contain at least 99 per cent. by weight of absolute alcohol (about 99.4 per cent. by volume).

Ordinary alcohol may be made stronger by macerating it with dried copper sulfate and filtering, or by macerating with freshly-burnt lime for 24 hours, decanting the liquid, and distilling off about three-fourths of the latter.

Deodorized Alcohol (U. S. P. 1890).—This differed from ordinary alcohol in being somewhat stronger (92½ per cent. by weight or 95.1 per cent by

volume of absolute alcohol) and in having been deprived of certain foreign constituents contained in the latter. The commercial "cologne spirits" is a deodorized alcohol but is usually not up to the requirements of the U. S. P. Alcohol of the present pharmacopeia is practically equal to the deodorized alcohol of the U. S. P. 1890.

Many methods for deodorizing alcohol have been recommended, but the following will be found satisfactory:

A convenient amount of alcohol is shaken with powdered potassium permanganate until it assumes a decided color. Then allow to stand for several hours until the permanganate has become decomposed, and brown manganese dioxid has deposited. A small amount, say $\frac{1}{4}$ ounce, of pulverized calcium carbonate should then be added, and the whole subjected to distillation, using a well-cooled receiver. Distil very slowly at first, testing the distillate frequently, until a mixture of the distillate and a strong (syrupy) solution of pure caustic soda or potassa, in the proportion of 10 of the former to 1 of the latter, gives no perceptible yellow coloration even on standing for 20 minutes or half an hour. The first portion of distillate that yields this coloration should be rejected; the last one-eighth of liquid should not be distilled, and should also be rejected. The remaining portion only is adapted for use.

This alcohol is adapted to all chemical purposes and for use in the manufacture of perfumes.

Alcohol or Alcohol Fortius or Strong Alcohol (Homeopathic) is the same as alcohol (U. S. P.). Whenever the term alcohol is used in homeopathic pharmacy, this kind of alcohol is understood. It is used in the preparation of tinctures. The so-called "homeopathic alcohol" is a good grade of this kind of alcohol, such as sold under the name "cologne spirits."

Officinal or Dispensing Alcohol or Alcohol Officinale (Homeopathic) con-

tains 83 per cent. by weight or 88 per cent. by volume of absolute alcohol and has a sp. gr. of 0.840 at 60 degrees C. It may be prepared by adding 1 volume of distilled water to 11 $\frac{3}{4}$ volumes of alcohol or 1 part by weight of distilled water to 9.64 parts by weight of alcohol.

It is used for making dilutions from tinctures because this degree of strength is more readily absorbed by both cane and milk sugars.

Proof Spirit, Brit. Pharm. (spiritus tenuior) is slightly stronger than diluted alcohol U. S. P., containing about 49 per cent. by weight or about 57 per cent. by volume of absolute alcohol.

For further signification of word "proof" when used in connection with alcoholic liquids, see Brandy, Proof.

Alcoolats.

These are a class of French preparations produced by distillation of drugs with alcohol. Balsamum (or baume de) floravanti is an example.

Alcoolatures.

A class of French preparations produced by the action of alcohol upon fresh plant parts. They correspond to the tinctures of fresh herbs of our pharmacopeia.

Alcooles.

Alcoole is a name sometimes applied in French to alcoholic tinctures of dry drugs.

Aloes, Purified.

Socotrine aloes.....av.oz. 16

Alcoholfl.oz. 3 $\frac{1}{4}$

Heat the aloes by means of a water bath until it is completely melted, then add the alcohol and, having stirred the mixture thoroughly, strain it through a No. 60 sieve which has just been dipped into boiling water. Evaporate the strained mixture by means of a water bath, constantly stirring, until a thread of the mass becomes brittle on cooling. Then allow to cool, break the product into pieces of convenient size, and keep in well-stoppered bottles.—U. S. P.

This process removes mechanical impurities from the aloes, such as fragments of wood, earthy matter, etc.

Alum, Porous.

This is prepared by evaporating the saturated solution of alum, freed from iron, and just before it is upon the point of crystallizing adding about 1/5 of 1 per cent. of sodium bicarbonate. The carbonic acid gas produced, when expelled by the heat, renders the mass porous.

Alum, Exsiccated or Dried. (Burnt Alum.)

Alum, small pieces.....av.oz. 20

Place in a shallow porcelain capsule so as to form a thin layer and heat it on a sand bath until it liquefies. Then continue the application of a moderate heat with constant stirring until aqueous vapor ceases to be evolved and a dry, white, porous mass is obtained weighing 11 av. ounces. When cold, reduce to fine powder, and preserve in well-stoppered bottles.—U. S. P.

Potassa alum, not ammonia alum, should be used to make the dried article.

Antimony Sulfid, Purified.

Antimony sulfid.....av.oz. 8
Ammonia water.....fl.oz. 4
Water, sufficient.

Reduce the antimony sulfid to very fine powder if not already in powder. Separate the coarse particles by elutriation and when the finely divided sulfid has deposited, pour off the water, add the ammonia water, and macerate for 5 days, agitating the mixture frequently. Then let the powder settle, pour off the ammonia water, and wash the residue by repeated affusion and decantation of water. Finally dry the product by the aid of a gentle heat.

This process removes copper and arsenic sulfids and other impurities.

The antimony sulfid must not be the ordinary commercial variety, as it is

usually adulterated with coal dust.—U. S. P. 1890.

Arquebusade. (Brown Arquebusade. —Wund Wasser.—Mistura Vulneraria Acida.—Aqua Vulneraria Thedeni.)

Acetic acid, diluted.....fl.oz. 8¼
Alcoholfl.oz. 3¾
Waterfl.oz. 1
Sulfuric acid, diluted.....fl.oz. 1¼
Clarified honey.....fl.oz. 2
Mix and filter.—H. and D.

Arquebusade, White. (Aqua Vulneraria Spirituosa or Vinosa.)

Oil of sage.....drops 7
Oil of wormwood.....drops 7
Oil of rue.....drops 7
Oil of peppermint.....drops 7
Oil of rosemary.....drops 7
Oil of marjoram.....drops 7
Oil of lavender flowers....drops 7
Alcoholfl.oz. 19
Waterfl.oz. 13

Dissolve the oils in the alcohol and then add the water.—H.

Balm of Gilead, Factitious. (Artificial Balsam of Mecca.)

The original is an oleoresin derived from a tree growing on the shores of the Red Sea. Imitations are much more common and are prepared as stated below:

I.

Benzoin, coarse powder....av.oz. 2
Liquid storax.....av.oz. 1½
Tolu balsam.....av.oz. 1
Balsam of fir.....av.oz. 12

Place in a glass flask or bottle, and subject to the heat of a water bath for several hours; agitate frequently until liquefied; allow to cool, and decant the clear portion, to which add sufficient of the oils of lemon, cassia, rosemary, and nutmeg and vanilla extract to give it a strong aromatic odor.

II.

Benzoin, coarse powder...av.oz. 1
Peru balsam.....av.oz. 1
Vanilla, cut small.....gr. 60
Nutmeg, broken.....gr. 60
Balsam of fir.....av.oz. 8

Digest the whole as above, decant, and to decanted liquid add same essential oils as in I.

Balm, Parturient.

Blue cohosh.....av.oz.	1
Spikenard.....av.oz.	1
Black cohosh.....av.oz.	1½
Mitchella.....av.oz.	½
Queen-of-the-meadow root.....av.oz.	1½
Ladies' slipper root.....av.oz.	¾
Comfrey.....av.oz.	¼
Sugar.....av.oz.	10
Alcohol, water, each to make fl.oz.	16

Mix the drugs, reduce to moderately coarse powder, and extract in the usual manner with a mixture of 1 volume of alcohol and 2 of water so as to obtain 10 fluidounces and in the latter dissolve the sugar by agitation, strain, and add simple syrup if necessary to make 16 fluidounces of percolate.—Eclectic modified.

Balsam Fioravanti. (Baume de Fioravanti.—Spiritus Balsamicus.)

Peru balsam.....drops	15
Rectified oil of turpentine.....drops	15
Oil of cassia.....drops	15
Oil of clove.....drops	15
Oil of juniper berries.....drops	15
Oil of mace.....drops	15
Oil of thyme (white).....drops	15
Alcohol.....to make fl.oz.	16

This is a simpler and more rational formula than that of the Codex, which requires distillation.—H.

Balsam, Friar's. (Traumatic, Wound, Vervain's, St. Victor's, Turlington's, Persian, Swedish, Commander's, or Wade's Balsam.—Jesuit's Drops.—Traumatic Elixir.)

Benzoin, coarse powder....gr.	720
Storax.....gr.	240
Tolu balsam.....gr.	240
Peru balsam.....gr.	120
Aloes, coarse powder.....gr.	60
Myrrh, coarse powder.....gr.	60
Angelica root, moderately coarse powder.....gr.	30
Alcohol.....fl.oz.	16

Macerate the substances with the alcohol during 10 days, frequently agitating, then filter.—N. F.

The above is like the formula adopted by the Philadelphia College of Pharmacy, the latter containing in addition 240 grains of extract of licorice.

The official compound tincture of ben-

zoin is a simplified preparation intended to replace the above compound, and is in fact usually dispensed for it. See Tincture of Benzoin, Compound.

Balsam of Honey. (Pectoral Balsam.)

Turmeric, powder.....gr.	40
Opium, powder.....gr.	80
Tolu balsam.....av.oz.	1½
Honey.....av.oz.	3½
Alcohol.....fl.oz.	12

Mix, macerate for 7 days, and filter. This preparation is also made without opium.

This is used for coughs, hoarseness, etc. It must be used cautiously on account of the opium present. The dose is 20 to 40 drops.—Cooley.

Balsam, Locatelli. (Wund Balsam.)

Venice turpentine.....av.oz.	2½
Yellow wax.....av.oz.	3
Olive oil.....av.oz.	4
Peru balsam.....av.oz.	½
Alkannin.....gr.	10

Melt the wax, add the other ingredients, and stir until solidified.

This is used for chilblains, sore nipples, etc.—H.'s Revised Praxis.

Balsam, Malta. (Balsam de Maltha.)

This makes a preparation known by this name:

Benzoin, powder.....av.oz.	1¾
Peru balsam.....av.oz.	1
Aloes.....gr.	120
Alcohol.....fl.oz.	16

Macerate for 7 days and filter.

Balsam, Metz's.

Olive oil.....av.oz.	6
Linseed oil.....av.oz.	6
Oil of laurel berries, expressed.....av.oz.	1
Gum of turpentine.....av.oz.	2
Verdigris, powder.....gr.	180
Aloes, powder.....gr.	150
Zinc sulfate, powder.....gr.	75
Oil of juniper wood.....fl.dr.	3
Oil of clove.....fl.dr.	1

Mix the linseed and olive oils and gum by gentle heat, transfer to a bottle and incorporate the powders and other oils.

Used as a dressing to wounds, ulcers, boils, etc.—H.

Balsam, Nutmeg. (*Balsamum Nucis-tae*. — Muskat Balsam. — Magen Balsam. — Nutmeg Cerate.)

- I.
 Yellow wax.....av.oz. 1
 Olive oil.....av.oz. 2
 Expressed oil of nutmeg...av.oz. 6
 Melt the wax and add the oils.
 —Germ. Pharm.

II.
 A cheaper preparation can be prepared according to the following formula:

- Olive oil.....fl.oz. 6
 Yellow wax.....av.oz. 2
 Spermacetigr. 130
 Expressed oil of nutmeg...av.oz. 7½
 Alkanetgr. 5
 Annattogr. 15
 Alcoholfl.dr. 2

Melt the wax and spermaceti, add the oil, divide it into two parts; in one portion, digest the alkanet for 5 minutes, add the nutmeg oil and strain; triturate the annatto with the alcohol, digest the mixture with the second portion of oily liquid for 5 minutes, strain, add this to the first colature, mix well, and pour into molds if desired. Of course, a cheaper preparation may be produced by using a cheaper oil than olive oil, such as cottonseed or benne oil.—D modified.

This is used as a warming application to the abdomen in bowel complaints of infants.

Balsam, Riga, Factitious.

The genuine, which is derived from a tree grown in northern Europe and Asia, is scarcely ever seen in this country, and the following mixtures are used as imitations:

- I.
 Aromatic water.....fl.oz. 14
 Spirit of sage (1 of oil to
 49 of alcohol).....fl.oz. 1½
 Tincture of Spanish saffron.fl.dr. 3
 Oleobalsamic mixture might be substituted for the aromatic water.

—H. modified.

- II.
 Oil of juniper wood.....fl.oz. 2
 Compound tincture of benzoinfl.oz. 2
 Alcoholfl.oz. 12

The genuine balsam is recommended for all kinds of ailments, internal and

external, e. g., for colds, indigestion, sea-sickness, bruises, toothache, etc.

Balsam of Sulfur. (Sulfurated Oil.)

- I.
 Linseed oil.....av.oz. 12
 Sublimed sulfur, washed
 and dried perfectly.....av.oz. 2
 Boil together in an iron vessel, stirring constantly, until a uniform liquid is obtained, being cautious in regulating the heat so that the liquid will not boil over.—H.

II.
 The directions of the old Edinburgh Pharmacopeia were to gently boil 8 parts of olive oil and 1 part of sublimed sulfur, in a large iron pot, stirring constantly until united. The pot should be large enough to hold three times the quantity of material operated upon, as otherwise the mixture might boil over. As the vapors which are given off are liable to take fire, a lid should be near at hand, so as to place over the pot and extinguish the flames.

Undoubtedly other oils, such as cottonseed oil, could be employed for making this preparation.—H.

Balsam of Turpentine.

This preparation is known by this name:

- Olive oil.....fl.oz. 6
 Oil of turpentine.....fl.oz. 2
 Yellow wax.....av.oz. 1
 Peru balsam.....fl.dr. 2
 Camphorgr. 120
 Essential oil of nutmeg...fl.dr. 2

Melt the wax, add the olive oil, and then incorporate the other ingredients.

Balsam, Universal.

- Liniment of camphor.....fl.oz. 2
 Cottonseed oil.....fl.oz. 2
 Yellow wax.....av.oz. 2
 Infused oil of henbane.....fl.oz. 8
 Solution of lead subacetate..fl.oz. 1½

Melt the wax, add the oils, allow to cool, and when fairly cool, thoroughly incorporate the lead solution with the mixture.—D.

Under the above title, many kinds of preparations are offered, but the formula given is believed to be the most sensible and will furnish as good a product as any.

Bandages, Plaster of Paris.

These are made by taking gauze of suitable kind and of the width desired, and rolling it up just as in making roller bandages, and while doing so, sprinkling over it freshly burned plaster of Paris sufficient to fill the pores. The bandage is then to be wrapped in waxed paper and put into a tin box, or it is put directly into the box, which latter should then be well closed.—D.

Benzin, Petroleum, Purified.

Potassium permanganate...av.oz. $1\frac{1}{4}$
 Sodium hydroxid.....av.oz. $\frac{1}{4}$
 Sulfuric acid.....fl.oz. 8
 Petroleum benzin.....gall. 1
 Water, sufficient.

Add the acid to 70 fluidounces of water and when the mixture has become cold, pour it into a bottle having the capacity of about 2 gallons. Add 1 av. ounce of potassium permanganate and agitate until it is dissolved, then add the benzin in four portions, shaking the liquid after each addition. Allow the liquids to remain in contact for 24 hours, shaking the bottle at frequent intervals; then decant the benzin into another bottle of the same capacity, and having dissolved $\frac{1}{4}$ av. ounce of potassium permanganate in 32 fluidounces of water, in which the caustic soda has previously been dissolved, mix the liquids and agitate the mixture frequently during several hours, then decant, repeat the washing with water, and again decant the purified benzin.—U. S. P.

Bismuth Oxid, Hydrated.

Bismuth subnitrate.....av.oz. 6
 Nitric acid.....av.oz. 10 or fl.oz. 7
 Ammonia water.....
 av.oz. 12 or fl.oz. 12
 Sodium bicarbonate.....av.oz. 1
 Distilled water, sufficient.

Mix the bismuth subnitrate with 4 fluidounces of distilled water in a quart flask, add 9 av. ounces (or about $6\frac{1}{4}$ fluidounces) of nitric acid, and promote the solution of the salt by agitation, and, if necessary, by a gentle heat. Pour the solution into 1 gallon of distilled

water previously acidulated with 1 av. ounce of nitric acid, and filter the liquid through absorbent cotton. Mix the ammonia water with 2 gallons of distilled water in a glazed vessel of double that capacity, and pour into it, slowly and with constant stirring, the bismuth solution. Let the mixture stand during 4 hours so that the precipitate may subside, then pour off the supernatant liquid, and wash the precipitate 4 times more by decantation with distilled water, the sodium bicarbonate being dissolved in the last wash-water. Pour the precipitate upon a wetted muslin strainer, and wash it with distilled water, until the washings run off tasteless. Transfer the strainer to a warm place, so that the precipitate may dry. Then rub the latter to powder, and keep it in well-stoppered bottles.

The nitric acid and the ammonia water used for the above should be of U. S. P. strength, the former 68 per cent., the latter 10 per cent. If the ammonia water be weaker or stronger than 10 per cent., correspondingly more or less of it must be employed.

Hydrated oxid of bismuth is sometimes demanded in the form of a creamy mixture with water, under the name of Cremor Bismuthi or Cream of Bismuth. This may be prepared by triturating 20 parts of the oxid with 80 parts of water.—N. F.

Bitters, Astringent.

Bayberrylb. 2
 Golden seal.....lb. 1
 Gingerlb. 1
 Capsicumoz. 2
 Cloveoz. 2

All in fine powder; mix well.—Thomsonian (from the Guide and the Materia Medica).

Bitters, Restorative and Relaxing.

Ox gall.....pint 1
 Holland gin.....pints 4
 Molassespints 4

—Thomsonian (from the Guide and the Materia Medica).

Bitters, Spice.**I. Thomsonian (from the Guide and the Materia Medica).**

Poplar bark	lb. 1
Balmomy	oz. 7
Bayberry	oz. 4
Ginger	oz. 4
Clove	oz. 3
Golden seal	oz. 3
Capsicum	oz. 1
Sugar	lb. 2

All in powder; mix well.

II. Thomsonian (from the Guide and the Materia Medica).

Poplar bark	oz. 10
Bayberry	oz. 2
Balmomy	oz. 2
Golden seal	oz. 1
Clove	oz. 1
Capsicum	oz. 1/2
Sugar	oz. 16

All in powder; mix well.

III. Thomsonian (from Comfort's Practice).

White aspen poplar bark.....	oz. 3
Black aspen poplar bark.....	oz. 3
Ginger	oz. 2
Golden seal	oz. 2
Cinnamon	oz. 1
Clove	oz. 1
Prickly ash bark.....	oz. 1/2
Capsicum	oz. 1/2
Sugar	lb. 8 or 9

All in fine powder; mix well.

Bitters, Spice, Ladies'. (Woman's Friend.)

Poplar bark.....	lb. 5
Unicorn	lb. 1/2
Cinnamon	lb. 1/2
Golden seal.....	lb. 1/2
Clove	lb. 1/2
Capsicum	oz. 4
Sugar	lb. 8

All in fine powder; mix well.

Another method of preparation is to add the powdered myrrh and unicorn root to the spice bitters in equal amount with the clove.—Thomsonian (from Comfort's Practice).

Bitters, Wine.**I. Thomsonian (from the Guide and the Materia Medica).**

Balmomy	part 1
Poplar bark.....	parts 5

Boil one ounce in enough water so that when strained there will be 1 1/4

pints of liquid, to which add, while hot, 3 1/2 ounces of sugar and 5/32 ounce of powdered ladies' slipper, strain, add 1 3/4 pints best Malaga wine and 2 fluid-ounces each of tincture of meadow fern and prickly ash berries.

II. Thomsonian (from the Guide and the Materia Medica).

Poplar bark.....	oz. 5
Balmomy	oz. 1
Water	pints 7 1/2
Sugar	oz. 20
Ladies' slipper, powder.....	oz. 1
4th-proof Jamaica rum or brandy	pints 2
Malaga wine.....	pints 10
Tincture of meadow fern.....	fl.oz. 8
Tincture of prickly ash bark.....	fl.oz. 8

Boil the poplar and balmomy with the water, strain, add while hot, the sugar and ladies' slipper, strain again and add the other ingredients.

The strength of the two tinctures is not stated.

III. Thomsonian (from Comfort's Practice).

Cinchona	oz. 1
Gentian	oz. 1
Columbo	oz. 1
Virginia snakeroot.....	oz. 1/2

Add a portion of orange peel and 2 quarts of good Madeira or Sherry wine.

IV. For the eclectic "wine bitters," see Wine of Golden Seal, Compound.**Blood, Dried Defibrinated. (Sanguis Bovinus Inspissatus or Exsiccatus.)**

This may be prepared by evaporating fresh defibrinated bullock's blood on a water bath, stirring constantly, until it assumes a granular condition; then spread on glass plates or parchment paper and keep at a temperature of 30 to 35 degrees C. (in a drying oven) until perfectly dry, after which it is powdered and put into well-stoppered bottles.

The defibrinated blood may be prepared by vigorously beating fresh blood in a broad dish with a stick or twig until there is no further separation of fibrin.—D.

Boroglycerin. (Glyceryl Borate. — Boroglyceride. — Glycerite of Boric Acid.)

Boric acid, fine powder....av.oz. 10
Glycerinav.oz. 14¾

Heat the glycerin in a tared porcelain capsule to a temperature not exceeding 150 degrees C., and add acid in portions, constantly stirring. When all is added and dissolved, continue the heat at the same temperature, frequently stirring, and breaking up the film which forms on the surface. When the mixture has become reduced to a weight of 16 av. ounces, pour it out on a flat surface previously coated with a very small quantity of petrolatum, let it cool, cut it into pieces and transfer them immediately to bottles or jars, which should be well-stoppered.

The official glycerite of boroglycerin may be made from this by adding an equal weight of glycerin to the finished boroglycerin while it is still warm.

When a solution of boroglycerin is required, it is preferable to prescribe or dispense the glycerite of boroglycerin, which see.—N. F.

Bougies.

See Suppositories.

Brandy, Proof.

The standard of proof for alcoholic liquids is 50 per cent. by volume of absolute alcohol and 50 per cent. of water. Second proof is 52½ per cent. of absolute alcohol; third proof is 55½ per cent., and fourth proof is 58 per cent. These are London proof. These expressions, especially fourth proof, such as fourth-proof brandy, are still met with.

Caffeine, Citrated.

Caffeine (alkaloid).....av.oz. 1
Citric acid.....av.oz. 1
Distilled water, hot.....fl.oz. 2

Dissolve the acid in the water, add the caffeine and evaporate the resulting solution on a water bath to dryness, constantly stirring towards the end of the process. Reduce the product to fine powder and transfer to well-closed bottles.—U. S. P.

Considerable confusion exists in regard to caffeine. It was formerly the custom of manufacturers to put up caffeine alkaloid under two labels, "caffeine" and "caffeine citrate." Caffeine is now put up under its proper label; caffeine citrate, true salt, is also to be had; and finally there is the above citrated caffeine. When physicians prescribed caffeine citrate, it was the alkaloid that was dispensed, and it is quite likely that when they now prescribe caffeine citrate, they intend the same article that was formerly dispensed, viz., the alkaloid. The U. S. P., however, intends that when caffeine citrate is prescribed, the above citrated caffeine should be dispensed.

Caffeine Sodio-Benzoate.

Caffeine (alkaloid).....av.oz. 1
Sodium benzoate.....av.oz. 1
Alcohol, sufficient.

Triturate the caffeine with the sodium benzoate and a sufficient quantity of alcohol to a smooth paste, and dry this by exposure in a moderately warm place. Rub the dry mass to powder, and keep in well-stoppered bottles.

The product contains 50 per cent. of caffeine, and is soluble in 2 parts of water.—N. F.

Caffeine Sodio-Salicylate.

Caffeine (alkaloid).....av.oz. 1
Sodium salicylate.....av.oz. 1
Alcohol, sufficient.

Triturate the caffeine with the sodium salicylate and a sufficient quantity of alcohol to a smooth paste, and dry this by exposure in a moderately warm place. Rub the dry mass to powder, and keep it in well-stoppered bottles.

The product contains 50 per cent. of caffeine, and is soluble in 2 parts of water.—N. F.

According to the Germ. Pharm., this preparation is to be made as follows:

Caffeine, alkaloid.....av.oz. 5
Sodium salicylate.....av.oz. 6
Waterfl.oz. 19

Dissolve the solids in the water and evaporate to dryness.

Calcium Sulfid. (Hepar Sulfur.)

The homeopathic article should be prepared according to Hahnemann's directions, by mixing equal weights of clean and finely powdered oyster shells and washed sulfur, placing this in a hermetically-closed clay crucible, and keeping the mixture at a white heat for 10 minutes. The product is to be cooled and preserved in glass-stoppered bottles, protected from light.

Camphor, Carbolized. (Phenol Camphor.)

Carbolic acid, crystal, part. 1
by weight.

Camphor, triturated.....parts 2

Mix in a bottle and agitate frequently until liquefied.—D.

Camphor, Chloral. (Camphorated Chloral.—Chloral and Camphor.—Chloral with Camphor.)

Chloral hydrate.

Camphor, equal parts by weight.

Mix by agitation in a bottle or trituration in a warm mortar until liquefied and combined.—N. F. and Brit. Form.

Camphor Cream.

This mixture has been known by this name:

White castile soap.....gr. 120

Ammonia carbonate.....gr. 120

Camphor, powder.....gr. 120

Tincture of opium.....fl.dr. 2

Oil of origanum.....fl.dr. 1

Water.....to make fl.oz. 16

Dissolve the soap in 4 or 5 times its weight of boiling water, allow the solution to cool, add the remaining ingredients, and mix well.

Sometimes this is made with double the amount of soap and is also made to contain 1 fluidounce of oil of turpentine to the pint.

A formula for a toilet preparation by the name of "Cream of Camphor" may also be found in the book on toilet preparations.

Camphor Julep.

This preparation has been credited to Thomsonian practice:

Camphorgr. 60

Myrrhgr. 210

Sugargr. 120

Waterfl.oz. 4

Triturate the solids together until well mixed, then gradually incorporate the water.

Camphor and Menthol. (Camphor-Menthol.)

Camphor.

Menthol, equal parts by weight.

Reduce the two separately to powder, then mix them, and triturate until the mixture is completely liquefied.—N. F.

Capsules, Gelatin, Sealing of.

Soft or elastic gelatin capsules are now furnished empty so as to be filled with any desired medicament. To seal them after filling, use a mixture of 6 drams of gelatin, 6 fluidrams of water and 2 fluidrams of glycerin. Mix these in a wide-mouth bottle, stopper the latter, and heat on a water-bath till the gelatin is all dissolved. The solution should be applied hot with the end of a rather broad round piece of wood.

Great care must be exercised in filling the capsules not to get any of the liquid on the neck of the capsule.

The ordinary variety of gelatin capsule may be filled, if desired, with liquid and sealed with the same solution, in this case painting or daubing the inside of the cap with the solution immediately before putting it on the body of the capsule.

The Germ. Pharm. specifically mentions capsules, but two kinds are described, one being the ordinary gelatin capsule, the other the so-called cachet or konseal.

The new N. F. also directs under the heading Powders that powders or triturations may be dispensed enclosed in hard capsules of gelatin.

Carbolated Chloral. (Chloral-Phenol.)

This is prepared by the triturating together equal parts by weight of chloral hydrate and crystal carbolic acid.

Cataplasms.

See Poultices, also Cataplasm of Kaolin.

Cataplasm of Kaolin. (Kaolin Paste.)

Kaolin, very fine powder..av.oz. $9\frac{1}{4}$
 Boric acid, very fine powder.av.oz. $\frac{3}{4}$
 Thymolgr. 4
 Methyl salicylate.....gr. 15
 Oil of peppermint, gr. 4 (about 6 drops).
 Glycerinav.oz. 6

Heat the kaolin in a suitable vessel at 100 deg. C. with occasional stirring, for one hour; mix it intimately with the acid, and then incorporate thoroughly with the glycerin; finally add the thymol which has previously been dissolved in the methyl salicylate and oil, and make a homogeneous mass.—U. S. P.

It should be kept in air-tight containers.

This cataplasm is intended to be used instead of various proprietary articles.

Catgut Ligatures.

What is known as catgut is prepared from the intestines of different animals, but usually of the sheep. To prepare the gut, the intestines are cleaned, mechanically freed from adherent fat, steeped for some time in water, after which the external membrane is scraped with a blunt tool like the back of a knife. The membrane is then cut into strips, bleached possibly, washed repeatedly in alkaline liquids and in water, sometimes dyed, dried, twisted or rolled, then smoothed, the last two operations being done by machinery, and finally is rubbed with a cloth impregnated with some fatty oil.

The catgut most commonly seen is that used as strings for musical instruments. Certain sizes of these strings are suitable for use as ligatures. These are what are known as the first and second banjo, and violin E, A, and D. These correspond to the sizes of ligatures known as Nos. 0, 1, 2, 3 and 4. Nos. 1, 2 and 3 are most generally employed.

Owing to the application of oil to the catgut before cutting to proper lengths and tying them into skeins, the ligature cannot be said to be in an aseptic condition if treated merely with an aqueous solution of carbolic acid (with or without chromic acid) or with cold alcohol with or without added antiseptic, although catgut so treated is used by surgeons. The gut should preferably be freed from fatty matter or at least it should be thoroughly penetrated by an actual solvent of the fatty matter, which solvent will, at the same time, render permanently sterile any septic matter or germs that may be contained in the gut. The fatty matter may be removed by maceration in chloroform, stronger ether or oil of juniper berries, or by boiling with absolute alcohol under pressure to 110 deg. C. or more. Treatment with these agents removes the fatty matter and at the same time renders the gut sterile.

Among other methods for sterilizing catgut (besides those mentioned under succeeding articles) are:

1. Maceration in oil of juniper berries and subsequent boiling with U. S. P. alcohol, then transferring to and keeping in biniodized chloroform (chloroform saturated with red mercuric iodid).

2. Treatment as in No. 1, but with omission of the oil.

3. Maceration for at least 48 hours in biniodized chloroform. The strings are to be left in this solution and taken out as required.

The gut may be boiled conveniently with U. S. P. alcohol (or other desired liquid) in a wide-mouthed glass flask provided with a well-cooled upright condenser which causes the condensed liquid to flow back into the flask. Catgut cannot be boiled under pressure with alcohol much weaker than absolute alcohol without softening and weakening it, and it is best not to continue the boiling for more than about an hour.

When boiling the gut in any of the above-mentioned liquids, the skeins may be suspended in the liquid as they are, or they may be wound on a reel or spool (preferably of glass), or they may be wound on a test-tube and the latter be loaded with shot so as to sink it in the liquid.

A firm manufacturing antiseptic dressings thus describes its process for sterilizing catgut:

1. Exterior cleansing of the ligatures by scrubbing.
2. Removal of moisture.
3. Winding in coils and sealing with in a toughened filter-paper envelope, this envelope is closed with an antiseptic cement which is germproof, but allows the disinfecting solutions used afterwards to pass through. After the ligatures are sealed in this envelope, they are not touched by any one until they reach the surgeon.
4. Successive percolation with solvents, naphtha, ether, benzol, alcohol, etc., for the removal of dirt, blood, foreign material, etc., within the tissue of the gut.
5. Sterilizing by boiling in a solution of cumol compound at a temperature of 160 to 170 deg. C.
6. Removal of cumol compound.
7. Sealing in a second or outer envelope and final packing in sterilized glass jars.

The biniodized chloroform or "chloroform with biniodid" is prepared by adding 35 grains of red mercuric iodid to 5 pounds of pure chloroform contained in a flask provided with an upright condenser, and boiling until the salt is dissolved, which requires about half an hour. The solution should then be transferred to bottles, which must be well stoppered. The solution is of the strength of 1 in 1,000, and at the ordinary indoor temperature is permanent. When exposed to a temperature of 15 deg. C. or less, some of the salt will crystallize out, but not much, un-

less the temperature is quite low. The mixture may assume a pink tinge due to the presence of loose chlorin compounds in the chloroform which liberate iodine from the iodid.

Catgut, Alcohol.

This is raw catgut treated with alcohol before use, as described above under Catgut Ligatures.

Catgut Ligatures, Carbolated.

I. Lister's process (in D.):

Carbolic acid, crystal.....av.oz. 1¼
Distilled waterfl.dr. 1
Olive oilfl.oz. 7

Mix in a wide-mouth glass bottle or other suitable vessel. Place in the mixture as much catgut as is to be impregnated, adding more liquid if necessary, to completely immerse the gut.

Allow the gut to remain in the turbid fluid until the latter becomes clear, agitating from time to time. When the liquid becomes transparent, the gut will have become soft and have absorbed water and acid. It is now wound upon glass spools, the whole then being immersed in a mixture of crystal carbolic acid and olive oil in the proportion of 1 of the former to 4 of the latter.

This is also the process of the military pharmacopoeia of Austria.

II. Block's process (in D.):

Roll the cleansed catgut upon glass spools, macerate in a 5 per cent. aqueous solution of carbolic acid for 48 hours, then unwind in a dish containing a freshly prepared 5 per cent aqueous carbolic acid solution, and now rewind (tightly) the gut upon the spool. Preserve in a 5 per cent solution of carbolic acid in alcohol.

III. Block's carbolic-alcohol process (in D.):

Prepare like the preceding, using an alcoholic solution of carbolic acid instead of an aqueous one as above.

Catgut Ligatures, Chromicized.

Chromic acidgr. 2
Carbolic acid, crystal.....gr. 400
Distilled water.....fl.oz. 17½

Dissolve and add an amount of catgut equal in weight to the carbolic acid used; allow to remain in the solution for 48 hours, then remove, dry, wind upon glass spools, and place in 20 per cent. carbolized oil.

This is Lister's process for hardening gut so that it will not be readily absorbed.—D.

Catgut Ligatures, Formaldehyde.

The raw catgut, wound on glass spools, is to be freed from fat by extraction with ether in the usual manner, and then placed in a sterile glass jar with a mixture of equal parts of 95 per cent. alcohol and 40 p. c. formaldehyde solution for 6 days, the jar being securely closed. The liquid is then to be poured off and the gut then boiled in normal salt solution for 20 minutes. The boiling may be repeated the next day. The gut is then to be transferred to sterile bottles with a sterile forceps and kept in alcohol.

Catgut Ligature, Mercuric Chlorid. (Corrosive Sublimate or Sublimated Catgut.)

I. Bergman's process (in D.):

Catgut rolled on glass spools is to be placed in 5 per cent. alcoholic solution of mercuric chlorid, renewing the solution every 2 days, until it remains clear, then preserve the gut in this solution.

II. Schede-Kuemmell process (in D.):

Catgut rolled upon glass spools is to be placed for 12 hours in a 1 per cent. aqueous solution of mercuric chlorid; then preserve in $\frac{1}{2}$ per cent. alcoholic solution of the same salt to which has previously been added 10 per cent. of glycerin.

Catgut Ligatures, Oil Juniper.

Macerate catgut for 24 hours in oil of juniper berries, then wind upon spools and preserve either in this oil or in the following solution:

Mercuric chlorid	gr. 4
Glycerin	fl.dr. 10
Alcohol	fl.oz. 16

←Kocher's process (in D.).

Caustic, Arsenical, Ratier's.

Arsenous acid	gr. 5
Kino	gr. 40
Cinnabar	gr. 80

All should be in very fine powder.

Caustic, Black, Velpeau's.

Triturate powdered licorice root in a mortar, adding sulfuric acid until a suitable mass is formed.

Caustic, Filhos'.

Caustic potash	parts 2
Lime	part 1

Fuse together and cast into pencils.

Caustic, Vienna.

See Potassa with Lime.

Cearin.

This is an ointment vehicle, proposed by Islieb, composed of 1 part of liquid paraffin and 4 of carnauba wax. It differs from paraffin ointment of the Germ. Pharm. in containing carnauba wax instead of paraffin.

Cerate, Benzoated.

Yellow wax	part 1
Benzoinated lard	parts 2

—Eclectic.

Cerate, Brown. (Brown Cerate or Ointment. — Mutter Salbe. — Unguentum Fuscum. — Emplastrum Fuscum Molle.)

I. Austr. Pharm.:

Lead plaster	av.oz. 5
Yellow wax	av.oz. 2
Lard	av.oz. 3

Melt the lead plaster and stir constantly while liquid, until it assumes a dark brown tint; add the wax and lard; allow to cool somewhat, and pour into molds.

II. D.:

A more rational and easy method of preparation is the following:

Black mother plaster	av.oz. 5
Lard	av.oz. 4
Yellow wax	av.oz. 1

Melt the plaster and wax, add the lard, allow to cool somewhat, and pour into molds as before.

Cerate, Calamine. (Turner's Cerate. — Cerate of Zinc Carbonate.)

Zinc carbonate	av.oz. 1
Simple cerate	av.oz. 5

—Eclectic.

Under the name Turner's Cerate or Calamine Ointment, the N. F. gives a preparation of the same strength as the above, but made with simple ointment.

Cerate, Calendula.

This may be prepared as follows:

Lard, freshav.oz. 8
Fluid extract of calendula...fl.oz. 1

Heat on a water bath until the alcohol has evaporated, stirring frequently meanwhile.

Another method consists in digesting the flowers with melted lard for about 10 minutes, stirring occasionally; then strain, and stir frequently until cooled. It is advisable to add about 2 av.ounces of yellow wax.

Cerate, Camphor.

Camphor linimentfl. or av.oz. 1½
White petrolatumav.oz. 2¼
White waxav.oz. 5¼
Benzoinated lardav.oz. 6

Melt the wax, add the petrolatum, then the benzoinated lard, and continue the heat until the mixture is liquefied. While the mixture is cooling, add the camphor liniment and incorporate by stirring until it congeals.—U. S. P.

Cerate, Cantharides. (Blistering Cerate or Plaster. — Cantharides Plaster. — Emplastrum Cantharides or Vesicans.)

Cantharides, No. 60 powder.av.oz. 5¼
Liquid petrolatumav.oz. 2½
Yellow waxav.oz. 3
Rosinav.oz. 3
Lardav.oz. 2¾

Mix the cantharides with the liquid petrolatum, and set the mixture aside, well covered, in a warm place, for 48 hours. Then add it to the rosin, wax and lard, previously melted and strained through muslin, and keep the mixture in a liquid condition by means of a water bath, stirring occasionally, for one hour. Finally remove it from the bath, and stir the mixture begins to congeal.—U. S. P.

In the U. S. P., 1890, the cantharides was extracted with oil of turpentine.

See also Cerate of Extract of Cantharides.

Cerate of Copper Subacetate. (Ceratum Aeruginis.—Ceratum Viride.—Green Cerate.)

Yellow waxav.oz. 6
Resinav.oz. 3
Gum turpentineav.oz. 2
Verdigris, powderav.oz. ½

Mix the wax, resin, and turpentine together, add the verdigris, which has previously been triturated to a smooth paste with some of the melted mixture, mix well, and pour into molds.—H.

Cerate, Croton Oil. (Ceratum Tigllum.)

Lardav.oz. 5
White waxav.oz. 1
Croton oilfl.oz. 2

Melt lard and wax together, when nearly cold add the oil, and stir until solid.—Eclectic.

Cerate of Extract of Cantharides.

Cantharides, No. 60 powder.av.oz. 3
Resinav.oz. 1½
Yellow waxav.oz. 3½
Lardav.oz. 3½
Alcoholsufficient

Moisten the cantharides with 2 fluid-ounces of alcohol and pack firmly in a cylindrical percolator; then gradually pour on alcohol until 17 fluidounces of percolate are obtained, or until the cantharides are exhausted. Distil off the alcohol by means of a water bath, transfer the residue to a tared capsule and evaporate it, on a water bath, until it weighs 1½ av.ounces. Add to this the resin, wax and lard previously melted together and keep the whole at a temperature of 100 deg. C. for 15 minutes. Lastly, strain the mixture through muslin and stir it constantly until cool.—N. F. Appendix and U. S. P. 1880.

See also Cerate of Cantharides.

Cerate of Lead Subacetate. (Goulard's Cerate.)

Sol. of lead subacetate...av.oz. 3
Wool fat, anhydrous....av.oz. 3
Paraffinav.oz. 3
White petrolatumav.oz. 5¾
Camphorgr. 140

To the melted wool fat contained in a warm mortar, add the lead solution and incorporate by slow trituration. To

the mixture add the petrolatum and paraffin, previously melted and in which the camphor has been dissolved; mix thoroughly until homogeneous.—U. S. P.

The corresponding preparation of the Germ. Pharm. is unguentum plumbi or lead ointment (different from diachylon ointment), which is made by evaporating 2 parts by weight of solution of lead subacetate to 1 part and incorporating with 19 parts of paraffin ointment.

Cerate, Nutmeg.

See Balsam, Nutmeg.

Cerate, Paraffin.

This has been offered as a pleasant substitute for simple cerate:

Paraffin	dr. 4
White wax	dr. 2
Sweet almond oil	fl.oz. 1
Oil of rose	drops 2

Cerate, Rosin. (Basilicon or Resin Ointment.)

Rosin	av.oz. 5¼
Yellow wax	av.oz. 2¼
Lard	av.oz. 7½

Melt the rosin, add the wax and lard, and continue the heat until liquefied, then strain the liquid through muslin, and allow it to congeal with occasional stirring.

In cold weather, 8 av.ounces of lard and 1¾ av.ounces of wax may be used.—U. S. P.

For the corresponding preparation of the Brit. and Germ. Pharms., see Ointment, Resin.

Cerate, Rosin, Compound. (Deshler's Salve.)

Rosin	av.oz. 4
Yellow wax	av.oz. 4
Suet, prepared	av.oz. 5¼
Gum turpentine	av.oz. 2
Linseed oil, raw	fl.oz. 2½

Melt the rosin, wax, turpentine and suet together, add the linseed oil, continue the heat until the mixture is liquefied, then strain through coarse muslin, and stir until it begins to congeal.—U. S. P.

This is a new preparation reintroduced from the U. S. P. 1870.

Cerate, Savine. (Savine Ointment.)

Fluid extract of savine	fl.oz. 1
Resin cerate	av.oz. 3¾

Melt the resin cerate by means of a water-bath, add the fluid extract, and continue the heat until the alcohol has evaporated; then remove the heat, and stir constantly until cool.—N. F. Appendix and U. S. P. 1880.

Cerate, Simple. (Cerate.)

White wax	av.oz. 3
White petrolatum	av.oz. 2
Benzoinated lard	av.oz. 5

Melt the wax, add the petrolatum, then the lard, continuing the heat until the mixture is liquefied, and stir it constantly until it begins to congeal.

For use in southern latitudes, and during the heated season in other localities, ½ av.ounce of lard may be replaced by an equal quantity of white wax.—U. S. P.

Cerate, Spermaceti.

Spermaceti	av.oz. 1
White wax	av.oz. 3½
Olive oil	av.oz. 5½

Melt together the spermaceti and wax, then add the oil previously heated, and stir the mixture constantly until cool.

The oil must be heated before adding to the waxes to avoid a granular product.—N. F. Appendix and U. S. P. 1890.

Charcoal, Animal, Purified.

Animal charcoal, No. 60 powder	av.oz. 8
Hydrochloric acid	fl.oz. 21
Water, boiling	sufficient

Introduce the charcoal into a capacious flask, add 14 fluidounces of hydrochloric acid and 32 fluidounces of boiling water, and connect the flask with an upright condenser. By means of a sand bath, keep the mixture boiling gently during 8 hours, adding water occasionally to maintain the original volume. Then add 40 fluidounces of boiling water, transfer the mixture to a muslin strainer, and when the liquid has run off, return the charcoal to the flask, add to it 7 fluidounces of hydrochloric

acid and 16 fluidounces of boiling water; boil for. 2 hours; again add 40 fluidounces of boiling water, transfer the whole to a plain filter, and when the liquid has run off, wash the residue with boiling water until the washings give only a faint cloudiness with silver nitrate test solution. Dry the powder in a drying oven and immediately transfer to well-stoppered bottles.—U. S. P.

The hydrochloric acid must be of full U. S. P. strength, 31.9 per cent. of absolute acid, else proportionately more of it must be employed. It converts the calcium phosphate and carbonate present in animal charcoal into chlorid and acid phosphate which are soluble in water and are removed by the washing.

Chloral, Camphorated.

See Camphor, Chloral.

Chloral, Carbulated.

See Carbulated Chloral.

Chloral, Mentholated.

Triturate together equal parts by weight of chloral and menthol, and then heat on a water bath until melted.

This is used as an application for neuralgia.

Chlorodyne.

This was first introduced in England as a "combination of perchloric acid with a new alkaloid." The name "chlorodyne" was undoubtedly invented by Dr. J. Collis Browne, but Mr. Freeman, pharmacist, claimed to be the inventor of the preparation. Whether Browne's and Freeman's chlorodynes were exactly the same is not known, but there was no foundation for their claims that new vegetable principles were contained in their medicines.

Dr. Ogden, of St. Mary's Hospital, London, published the following formula as a result of a pretended "analysis":

Morphine hydrochlorid	gr. 8
Hydrocyanic acid, Scheele's	
.....	drops 12
Oil of peppermint.....	drops 2
Perchloric acid	drops 20
Tincture of cannabis indica..	fl.dr. 1
Tincture of capsicum.....	m. 30
Chloric ether	fl.dr. 1
Molasses	fl.dr. 1
Chloroform	fl.dr. 6

The formula, actually used by Dr. Ogden in the hospital, appears to have been slightly different from this.

Later, after the nostrum was introduced into America, Charles Bullock published the following formula as the result of an analysis:

Morphine hydrochlorid.....	gr. 8
Water	m. 30
Perchloric acid (25 deg. B.)	
.....	drops 20
Chloroform	fl.dr. 1½
Tincture of cannabis indica..	fl.dr. 1
Hydrocyanic acid, U. S. P.....	drops 12
Molasses	fl.dr. 4
Oil of peppermint.....	drops 2
Oleoresin of capsicum.....	drop 1

To the morphine salt and water contained in a flask, add the perchloric acid and heat until a clear solution is effected. Then add the molasses, previously warmed so as to render it fluid. Heat the mixture and agitate well. When cold add the other ingredients and mix well.

A number of other substitutes have been and are still in use, the formulas (there are about 30 published formulas and an innumerable number of private formulas) for which differ from another more or less, sometimes quite materially, both in kind and quantity of ingredients. The National Formulary recognizes one of these preparations under the name Compound Mixture of Chloroform and Cannabis Indica or "chloroform anodyne." The Brit. Pharm. preparation is called compound tincture of chloroform and morphine.

Browne's preparation is thick, turbid, and brownish, but many of the other preparations now on the market are limpid, transparent, and bright green in color.

The formulas given below are the ones which have proved the most popular:

I.

Chloroform	fl.oz. 2
Stronger ether	fl.dr. 4
Tincture of cannabis indica.....	fl.oz. 3
Tincture of capsicum.....	fl.dr. 4
Morphine sulfate	gr. 18
Oil of peppermint.....	m. 15
Glycerin	fl.oz. 2
Water	fl.oz. 1
Alcohol, to make.....	fl.oz. 16

Dissolve the oil in 8 fluidounces of alcohol, add the chloroform, ether and tinctures, mix well, add the morphine sulfate previously dissolved in the water and glycerin; finally add the remainder of alcohol.—N. F.

II. Brit. Pharm. 1898 (which calls it compound tincture of chloroform and morphine):

Morphine hydrochlorid	gr. 36
Diluted hydrocyanic acid.....	fl.dr. 3¼
Tincture of capsicum.....	m. 100
Tincture of cannabis indica	fl.dr. 6½
Oil of peppermint.....	m. 6
Glycerin	fl.oz. 2
Alcohol, to make.....	fl.oz. 8

This preparation contains 4 times as much morphine as the corresponding preparation of the Brit. Pharm. of 1885. Otherwise it differs materially from the latter. See No. III.

III. Brit. Pharm. 1885 (which called it tincture of chloroform and morphine):

Chloroform	fl.oz. 1
Ether	fl.dr. 2
Alcohol	fl.oz. 1
Morphine hydrochlorid.....	gr. 8
Diluted hydrocyanic acid.....	fl.dr. 4
Oil of peppermint.....	m. 4
Fluid extract of licorice.....	fl.oz. 1
Molasses	fl.oz. 1
Simple syrup, to make.....	fl.oz. 8

Dissolve the morphine and oil in the alcohol, and add the chloroform and ether. Mix the extract and molasses with 3 fluidounces of syrup, add to the solution, mix thoroughly, add the acid and the remainder of the syrup.

IV.

Chloroform	fl.dr. 2
Morphine	gr. 10
Ether	fl.dr. 1
Oil of peppermint.....	drops 8
Diluted hydrocyanic acid.....	fl.dr. 2
Tincture of capsicum.....	fl.dr. 2
Molasses	fl.oz. 2½
Extract of licorice.....	gr. 30

This is said to resemble Browne's very closely.

V. Chandler's formula:

Morphine hydrochlorid.....	gr. 16
Oil of peppermint.....	drops 20
Tincture of capsicum	drops 30
Fluid extract of cannabis indica	fl.dr. 1
Alcohol	fl.oz. 2
Glycerin	fl.oz. 2

VI. Smith's formula (modified):

Chloroform	fl.dr. 4
Morphine hydrochlorid.....	gr. 20
Oil of peppermint.....	drops 8
Tincture of capsicum.....	fl.dr. 1
Diluted hydrocyanic acid.....	fl.dr. 2
Mucilage of acacia.....	fl.oz. 1
Fluid extract of cannabis indica	fl.dr. 2
Simple syrup, to make.....	fl.oz. 4
Caramel, sufficient to color properly.	

VII. Squires' formula:

Chloroform	fl.oz. 1
Stronger ether	fl.dr. 2
Alcohol	fl.oz. 1
Molasses	fl.oz. 1
Extract of licorice, powder.....	gr. 300
Morphine hydrochlorid	gr. 2
Oil of peppermint.....	drops 4
Simple syrup	fl.oz. 4½
Diluted hydrocyanic acid.....	fl.dr. 4

Dissolve the morphine and oil of peppermint in the alcohol, mix the chloroform and ether with this solution, mix the licorice with the syrup, add the molasses, shake these two mixtures well together, and, lastly, add the hydrocyanic acid and again shake well.

VIII. Gilman's formula:

Chloroform	fl.dr. 2
Spirit of peppermint.....	fl.dr. 2
Diluted hydrocyanic acid.....	fl.dr. 2
Tincture of capsicum.....	fl.dr. 2
Morphine hydrochlorid.....	gr. 8
Glycerin	fl.oz. 2
Alcohol	fl.oz. 2
Molasses	fl.oz. 3

IX. Fenner's formula No. 1:

Chloroform	fl.dr. 4
Ether	fl.dr. 2
Diluted hydrocyanic acid.....	fl.dr. 4
Tincture of capsicum.....	fl.dr. 4
Mucilage of acacia	fl.oz. 1
Morphine sulfate	gr. 20
Oil of peppermint.....	m. 8
Molasses	fl.oz. 4

Mix the chloroform with the mucilage and shake, add the oil and molasses; dissolve the morphine in the tincture, and add this solution with the other liquids to the mixture of syrup, etc., and shake them thoroughly.

This is stated to be very similar to Browne's.

X. Fenner's formula No. 2:

Morphine sulfate	gr. 15
Chloroform	fl.oz. 1
Fluid extract of cannabis indica.....	fl.oz. 1
Glycerin	fl.oz. 1
Alcohol	fl.oz. 1
Diluted hydrocyanic acid.....	drops 15
Spirit of peppermint.....	drops 15

Mix the liquids and dissolve the morphine in the mixture.

XI. A prominent manufacturing house makes a preparation called "chloranodyne" which is stated to contain in each fluidounce—

Morphine hydrochlorid.....	gr. 27 $\frac{3}{8}$
Fluid Indian cannabis.....	m. 46
Chloroform	m. 46
Oil of peppermint.....	m. 1 $\frac{1}{2}$
Tincture of capsicum.....	m. 1 $\frac{1}{2}$
Diluted hydrocyanic acid.....	m. 9

This is similar to No. II.

Chloroform of Aconite. (Aconite Chloroform.)

Aconite root	av.oz. 11
Ammonia water	fl.oz. 2
Distilled water	fl.oz. 10
Chloroform	sufficient

Bruise the aconite, moisten thoroughly with the distilled water and ammonia previously mixed, macerate for 4 hours, dry carefully, reduce to No. 40 powder, pack tightly in a percolator (such as would be used for highly volatile liquids), macerate for 24 hours with 11 fluid ounces of chloroform, and then percolate slowly, adding more chloroform until 16 fluidounces of product are obtained.—Brit. Form.

"Chloroforms" of other alkaloidal drugs, such as belladonna, hyoscyamus, etc., may be produced in the same manner.

Chloroform of Belladonna. (Belladonna Chloroform.)

Prepare like the preceding, using belladonna root in No. 60 powder as the drug.—Brit. Form.

Chloroform, Camphorated.

Chloroform	fl.oz. 4
Camphor	av.oz. 8

Mix and dissolve.—Brit. Form.

Cigarettes, Cubeb.

While it probably will not pay the pharmacist to prepare his own cubeb cigarettes, the following hints and formula may not be amiss:

The first step in the process of manufacture is the molding of the casement of the cigarettes, which consists in forming into a sound hollow tube cigarette paper about 3 inches long and about $\frac{1}{4}$ inch in diameter. The ordinary round lead pencil will answer for a mold around which the paper can be rolled—when the paper tube is formed, turn in one of the ends so as to form the bottom. Now place a number of these tubes into a rack, and by the use of a sieve of the proper fineness the mixture of drugs is sifted over the paper tubes until they are filled up within an inch of the top, after pressing the mixture so that it is evenly distributed a small piece of cotton is placed over it and a mouthpiece is inserted, which is made out of a piece of cardboard one inch long and a trifle smaller in diameter so that it can be inserted into the paper tube and the cigarette is finished. Ten or thirty of these are then wrapped in paraffin paper and placed in a paper carton with printed directions for use.

The mixture used for filling varies with different manufacturers; the following are said to be used:

Cubeb berries	part 1
Cubeb berries, exhausted.....	parts 3
Mullein leaves	part 1

Or—

Cubeb berriesparts 9
Anise seedpart 1

Or—

Cubeb berriespart 1
Cubeb berries, exhausted...parts 4
Coltsfoot leavespart 1

Or—

Cubeb berriesparts 7
Mullein leavesparts 2
Lobelia herbpart 1

Or—

Cubeb berriesparts 15
Cassia budspart 1
Clovespart 1
Chestnut leavesparts 3

Or—

Cubeb berriesparts 2
Cubeb berries, exhausted...parts 10
Mullein leavesparts 4
Cascarilla barkpart 1

The drugs should be ground to No. 20 powder. Some manufacturers add to the mixture of drugs glycerin and potassium nitrate, to increase the burning quality of the cigarette. The usual quantity is 1 av.ounce of the potassium salt to a pint of water, or 4 fluidounces of glycerin and 12 fluidounces of water, either of these to be added to 10 av. pounds of the mixture of drugs, the whole then to be thoroughly dried. Each of the cigarettes contains about 15 grains of the mixture.

The paper casements or tubes are an article of the market, and can be purchased at 50 cents per thousand from manufacturers. At this figure it hardly would be profitable for the beginner to make them himself.

Several of the formulas contain exhausted cubeb berries. If these cannot be purchased, the crushed berries can easily be exhausted of a large percentage of the oil of cubeb by solvents like ether, carbon bisulphide or benzin. Benzin would seem to be the best, as it is readily obtained of very light gravity in the market and at a very low price. The oil of cubeb so extracted can be purified and thus becomes an extra source of profit in this line of manufacture. It is stated that where the excess of oil

is not removed, the paper casement becomes stained, and it is also objectionable in the smoking of the cigarette, as some of the oil is carried into the mouth.

As is well known, these cigarettes are used in catarrh, hay fever, asthma, etc.

Collodion.

Pyroxylin (soluble gun cotton) gr. 290
Ether, strongerfl.oz. 12
Alcoholfl.oz. 4

To the pyroxylin, contained in a suitable bottle, add the ether and let stand for 15 minutes; then add the alcohol and shake the bottle until the pyroxylin is dissolved. Cork the bottle well and set it aside until the liquid has become clear. Finally decant the clear portion from any sediment which may have deposited, and transfer it to bottles which should be well corked and sealed.

Keep in a cool place remote from lights and fire.—U. S. P.

Acetone is said to be an excellent solvent for pyroxylin and might be substituted for the alcohol and ether.

The Brit. Pharm. directs only 150 gr. of pyroxylin for the above amount of liquid. The Germ. Pharm. uses 240 gr. of pyroxylin, agitates this with 1¾ fluidounces of alcohol until well mixed, then with 14¼ fluidounces of stronger ether.

Collodion, Aconite.

Such a preparation may be made as follows:

Aconite root, fine powder.av.oz. 8½
Stronger ether.....fl.oz. 12
Alcoholsufficient.
Balsam of fir.....gr. 240
Pyroxylingr. 60

Pack the powder very tightly in a percolator intended for volatile liquids, mix the ether with 4 fluidounces of alcohol, saturate the drug with this liquid, macerate for about 6 hours, then percolate slowly, adding enough alcohol through the percolator so as to make 16 fluidounces of percolate. In this dissolve the balsam and pyroxylin.

Collodion, Belladonna. (Fluid Belladonna Plaster.)

Alcoholic extract of belladonna leaf, a quantity containing 37 grains of alkaloids.

Camphorgr. 108

Gun cotton.....gr. 185

Alcohol, stronger ether, each, to make.....fl.oz. 16

Dissolve the extract in $7\frac{1}{2}$ fluidounces of alcohol, add the same volume of stronger ether, set aside for 24 hours, decant, dissolve the gun cotton and camphor in the liquid, and equal parts of stronger ether and alcohol enough to make 16 fluidounces.—Brit. Form.

Collodion, Benzoinated. (Kelly's Collodion Paint.)

Glycerinfl.dr. 2

Compound tincture of benzoinfl.oz. 3

Collodionfl.oz. 6

This is used in New York City hospitals.

Collodion, Cantharidal. (Blistering or Vesicating Collodion.—Collodion with Cantharides.)

I.

Cantharides, No. 60 powder.av.oz 3

Collodion, flexible.....av.oz. $4\frac{1}{4}$

Chloroformsufficient.

Pack the cantharides firmly in a cylindrical percolator and gradually pour chloroform upon it until the powder is exhausted. Recover the chloroform by distillation from a water bath and evaporate the residue in a capsule on a water bath until it weighs $\frac{3}{4}$ av. ounce. Dissolve this in the flexible collodion and set it aside in a securely corked bottle, and in a cool place, to become clear by settling. Finally pour off the clear portion from any sediment which may have deposited and transfer it to bottles which should be well corked and sealed.—U. S. P.

Keep in a cool place, remote from lights or fire.

Cantharidin collodion may be used in place of cantharidal collodion as a vesicant if desired.

II.

Pyroxylingr. 45

Blistering liquid.....fl.oz. 4

Mix in a well-stoppered bottle and dissolve by agitation.—Brit. Pharm.

III.

Exhaust coarsely-powdered cantharides with stronger ether, evaporate the liquid on a water bath to syrupy consistency, and add enough collodion to make up a weight equal to the original weight of the cantharides.—Germ. Pharm.

Collodion, Cantharidin.

Cantharidingr. 3

Gum turpentine.....av.oz. 1

Chloroformfl.dr. 3

Collodion, to make.....fl.oz. 8

Triturate the cantharidin with the turpentine to as fine a powder as possible, then add the chloroform and heat the mixture very cautiously until solution occurs; then add to the collodion. If a green color be desired, add a small amount of Squibb's or English extract of cannabis indica.—D. modified.

This contains 1/10 per cent. of cantharidin.

This may be used in place of cantharidal collodion, being more easily made and equally efficacious.

Collodion, Carbolated Salicylic.

Carbolic acid, crystal.....av.oz. 1

Salicylic acid.....av.oz. 1

Collodionfl.oz. 5

Mix and dissolve by agitation. The product contains one-third by weight of the combined acids.—Unna's (in D.).

Collodion, Chrysarobin.

Chrysarobingr. 320

Collodionfl.oz. 8

The chrysarobin should be in very fine powder and be dissolved in the collodion by agitation.—D.

The product contains about 10 per cent by weight of chrysarobin. It may be used instead of chrysarobin ointment.

Collodion, Croton Oil. (Tigilium Collodion.)

Croton oil.....av.oz. $\frac{1}{2}$

Flexible collodion.....av.oz. $\frac{4}{2}$

Or mix in the proportion of 60 minims of oil with 7 fluidrams of flexible collodion.—N. F.

Collodion, Flexible. (Elastic Collodion.)

Collodionav.oz. 4
Canada turpentine (balsam of fir)gr. 100
Castor oil.....gr. 60

Weigh the ingredients successively into a tared bottle and mix them thoroughly.

Preserve in cork-stoppered bottles in a cool place remote from lights or fire.—U. S. P.

The Brit. Pharm. directs 4 fluidounces of its collodion, 80 gr. of Canada turpentine and 40 gr. of castor oil. The Germ. Pharm. directs 4 av. ounces of its collodion, 18 gr. of castor oil and 90 gr. of common, thick turpentine.

Collodion, Iodized.

Iodin, reduced to powder...gr. 160
Flexible collodion.....fl.oz. 8

Introduce the iodine into a bottle, add the flexible collodion and agitate until the iodine is dissolved.—N. F.

This contains about 5 per cent. by weight of iodine.

Collodion, Iodoform.

Iodoformgr. 160
Flexible collodion.....fl.oz. 8

Mix and dissolve the iodoform in the flexible collodion by agitation.—N. F.

This contains about 5 per cent. by weight of iodoform.

Collodion, Iodol.

Such a preparation may be made as follows:

Iodolav.oz. $\frac{3}{4}$
Alcoholfl.dr. 11
Etherfl.oz. 6
Pyroxylingr. 130
Castor oil, fl.dr. $3\frac{1}{2}$ (or gr. 185 if weighed).

Dissolve the iodol in the mixture of alcohol and ether, add the pyroxylin in small portions, agitate until dissolved, and finally add the oil.

The product contains about 10 per cent. by weight of iodol.

Collodion, Salicylated, Compound. (Corn Collodion.)

Salicylic acid.....av.oz. 1
Extract of cannabis indica
(Squibb's or English).....gr. 80
Alcoholfl.oz. 1
Flexible collodion, to make.av.oz. 9

Dissolve the extract in the alcohol and the acid in about 5 ounces of flexible collodion previously weighed into a tared bottle. Then add the former solution to the latter and finally add enough of the collodion to make 9 av. ounces.—N. F.

Collodion, Styptic. (Tannin Collodion.)

I.

Tannic acid.....gr. 365
Alcoholm. 100
Ether, stronger.....fl.oz. 1
Collodion, to make.....fl.oz. 4

Introduce the acid, alcohol and ether into a graduated bottle, agitate until the acid is thoroughly disintegrated and partially dissolved, then add enough collodion to make 4 fluidounces and shake occasionally until the acid is completely dissolved.—U. S. P.

Keep the product in cork-stoppered bottles in a cool place remote from lights or fire.

II.

Benzoingr. 44
Pyroxylingr. 44
Tannic acid.....av.oz. 1
Absolute alcohol.....fl.oz. 1
Stronger ether.....fl.oz. 4

Dissolve the benzoin in the alcohol, filter, in the filtrate dissolve the acid, add the other ingredients, set aside for 3 days and decant the clear liquid.

—Brit. Form.

Collodion, Tannated. (Paves's Styptic Collodion.)

Tanningr. 150
Benzoic acid.....gr. 90
Carbolic acid, crystal.....gr. 300
Collodionfl.oz. 8

Mix and dissolve by agitation.

Coloring Agents.

A number of preparations are used for the purpose of imparting color to other preparations. The preparations,

used for this purpose, mentioned in this part are cochineal color, solution of litmus, solution of carmine, tincture of cochineal, tincture of cudbear, compound tincture of cudbear, tincture of turmeric and tincture of saffron.

Color, Cochineal.

Cochineal, No. 50 powder.	av.oz.	I
Potassium bitartrate.....	av.oz.	I
Potassium carbonate.....	av.oz.	$\frac{1}{2}$
Alum	av.oz.	$\frac{1}{2}$
Glycerin	fl.oz.	8
Alcohol	fl.dr.	4
Water, to make.....	fl.oz.	16

Triturate the cochineal intimately with the potassium carbonate and 8 fluidounces of water. Then add the alum and potassium bitartrate successively, heat the mixture to boiling in a capacious vessel, then set it aside to cool, add to it the glycerin and alcohol, filter, and pass enough water through the filter to make 16 fluidounces.—N. F.

Concentrations.

This class of preparations was originally introduced by physicians of the Eclectic school of medicine and subsequently was employed by physicians of other schools. They are now employed in Europe; and one, at least, has found recognition in the U. S. P., viz., podophyllin.

The general plan for their manufacture originally consisted in extracting the drug with strong alcohol, evaporating this tincture to small bulk, adding to cold water, stirring constantly meanwhile, allowing the precipitate formed to subside, collecting the latter, and drying and powdering it.

If the drug contain an oleoresin, the precipitate cannot be dried sufficiently to powder, but remains a soft, sticky mass. In this case, the precipitate should be dried sufficiently to remove the water, then add enough of the original drug, in powdered form, to reduce to a rather tough mass, break the latter into small pieces, dry in warm air, and pulverize as before.

In many instances, there would be, by

the use of water alone as a precipitating agent, an inappreciable amount of precipitate. In such cases, alum is added to the water and some ammonium carbonate to the alcoholic liquid. The precipitate contains aluminium hydrate, and the product will very often be green from precipitated chlorophyll.

Other substances are added to the water to facilitate precipitation, such as acids and alkalies, depending, of course, upon the character of the drug.

While the above methods of preparing concentrations were advised by Eclectic practitioners, other methods are or have been in vogue among manufacturers. In many instances, the concentration is simply a powdered extract, the so-called "euonymin," for example, the drug often being exhausted with dilute alcohol or water. Instead of using the powdered drug as a drying agent, as is stated above, most manufacturers use milk sugar, magnesia or other absorbent powder. Probably most concentrations of the present day are simply powdered extracts.

See "Hydrastin" and "Iridin" for one method for making these concentrations.

Most of the concentrations are supposed to be resinous in character, and are termed "resinoids," while others are alkaloidal in character. The latter are believed to be prepared by exhausting the drug with a very dilute acid (from $\frac{1}{2}$ to 3 per cent.), usually hydrochloric or sulfuric, evaporating the liquid obtained to moderate bulk, adding ammonia to neutralize the acid, collecting the precipitate, and washing and drying it. Hydrastis and sanguinaria are drugs treated in this manner.

As may be surmised from what has been stated, concentrations from different manufacturers differ from each other greatly in quality and strength and color, as well as in other properties.

The nomenclature of the concentrations is very confusing. The resinoids have names ending in "in"—cornin,

helenin, etc.—while those of alkaloidal character are known by names ending either in “in” or “ia,” and are coupled with names indicating the acid employed in extraction, e. g., hydrastia sulfate, sanguinarin nitrate, etc. Manufacturers of pharmaceuticals have not only modified the processes of preparation, but have introduced innovations in the titles. When it is borne in mind that glucosides have names terminating in “in,” and that alkaloidal names end in “ine” (“ia” is also used), and that almost all drugs contain glucosides or alkaloids or even both, one can readily see that almost inextricable confusion must result, often to the serious detriment of sick persons. This is the case particularly with the derivatives of hydrastis and sanguinaria.

The following table is presented because of its convenience for reference. It will not apply to the products of all manufacturers, nor does it mention all concentrations, but it may prove useful nevertheless.

Class I. Concentrations consisting largely of resin and nearly or entirely soluble in alcohol:

Aletridin,* Asclepidin,* Cimicifugin (Macrotin), Eryngin,* Helonin,* Iridin,* Liatrin,* Podophyllin (U. S. P.), Ptelein.*

Class II. Concentrations which generally contain inorganic constituents from the process of manufacture, and are frequently of a green character:

Barosmin, Euonymin (green variety), Lobelin, Lycopin, Podophyllin (yellow variety), Scutellarin, Senecin.

Class III. Concentrations which contain a number (probably most) of the soluble drug constituents:

Aletrin,* Aluin, Ampelopsin, Apocynin, Asclepidin,* Baptisin, Betulin, Caulophyllin, Cerasin, Chelonin, Chimaphilin, Chionanthin, Collinsonin, Colocynthin, Cornin, Corydalin, Cyprapedin, Dioscorin, Euonymin (brown variety), Euptaorin, Euphorbin, Eupurpurin, Fra-

serin, Gelsemin, Geranin, Gossypin, Hamamelin, Humulin, Inulin, Irisin,* Jalapin, Juglandin, Leontodin, Leptandrin, Liatrin,* Liriodendrin, Menisperm, Myricin, Phytolaccin, Prunin, Rhusin, Rumicin, Smilacin, Stillingin, Taraxin, Trillin, Viburnin, Xanthoxylin.

Class IV. Concentrations which consist of alkaloids or alkaloidal salts in more or less impure form:

Hydrastin, Hydrastia Sulfate, Muriate, etc.; Sanguinarin, Sanguinarina Nitrate, Sulfate, etc.

Those concentrations whose names have the stars appear in the market in both pulverulent and oleoresinous forms.

Cones, Homeopathic.

See Medications, Homeopathic.

Confection of Calamus. (Sugared Calamus.—Candied Sweet Flag.)

This may be prepared as follows:

Calamus root, peeled, sliced	
and cut into pieces about	
1/2 inch long.....	av.oz. 8
Water	fl.oz. 32
Sugar	av.oz. 96

Macerate the root in the water for 12 hours, add the sugar, and heat, stirring constantly until perfectly dry. At first the evaporation may be conducted over a direct flame or fire, but toward the latter end of the operation, water-bath temperature only should be employed. Care must be taken not to burn or scorch the root.

Confection of Hollyhock. (Conserve of Hollyhock. — Antidyspeptic Conserve.)

I. Thomsonian (from the *Materia Medica*):

Fresh hollyhock blossoms.....	lb. 1
Or dry ones moistened to	
the same consistence as	
the green.	

Sugar	lb. 4
Poplar bark.....	lb. 2
Ginger	lb. 2
Golden seal.....	lb. 1/2
Balmomy	lb. 1/2
Clove	lb. 1/2
Slippery elm bark.....	lb. 1/2
Capsicum	lb. 1/2
Pennyroyal	oz. 1/4

Beat the blossoms with the sugar to a uniform paste, then incorporate the other substances, all in powder, and roll into small cones. These may be dried or kept moist as may be desired.

II. Thomsonian (from Comfort's Practice):

Poplar bark.....oz.	I
Bayberry bark.....oz.	I
Golden seal.....oz.	I
Clove.....oz.	I
Cinnamon.....oz.	I
Cypripedium.....oz.	I
Capsicum.....oz.	1/2
Oil of pennyroyal.....oz.	1/2
Hollyhock flowers.....oz.	16

Mix the first seven ingredients, add the oil and flowers, pound together, and form into balls the size of small marbles.

Confection of Opium. (Electuary of Theriac.—Theriac.)

I. Brit. Pharm. (1885):

Compound powder of opium.....av.oz.	4
Simple syrup.....fl.oz.	9

II. U. S. P. 1870:

Opium, powder.....gr.	120
Aromatic powder.....av.oz.	3
Clarified honey.....av.oz.	7

III. H.:

Cassia bark.....av.oz.	1 3/4
Angelica root.....gr.	350
Virginia snake root.....gr.	280
Valerian root.....gr.	140
Squill.....gr.	140
Zedoary.....gr.	140
Opium.....gr.	70
Cardamom.....gr.	70
Clove.....gr.	70
Myrrh.....gr.	70
Iron sulfate, crystal.....gr.	70
Glycerin, Simple syrup, Honey, equal parts to each by weight, to make....av.oz.	16

Mix the ingredients above in powder form, or preferably mix them whole, and then reduce to powder; then add the glycerin, syrup and honey.

The cardamom should be used without the capsule or enveloping membrane.

These preparations differ in many respects, but the most noteworthy difference is in the proportion of opium, the first two containing about 2 1/2 per cent.

of this drug, the last about 1 per cent.; the kind of confection to be dispensed therefore will depend on the nationality of the consumer or the kind he has been in the habit of using.

Confection of Pepper.

Black pepper, powder.....av.oz.	1
Caraway, powder.....av.oz.	1 1/2
Clarified honey.....av.oz.	7 1/2

—Brit. Pharm.

Confection of Rose. (Confection of Roses.)

I.

Red rose petals, fine powder.gr.	290
Sugar, fine powder.....av.oz.	5
Honey, clarified.....av.oz.	1
Stronger rose water.....fl.oz.	1 1/4

Rub the red rose with the water previously heated to 65 degrees C., then gradually add the sugar and honey, and beat the whole together until a uniform mass results.—U. S. P.

II.

Fresh red rose petals.....av.oz.	4
Sugar.....av.oz.	12

Beat together in a stone mortar.—

Brit. Pharm.

Confection of Senna. (Lenitive Electuary.)

I.

Senna, fine powder.....av.oz.	2
Cassia fistula, bruised.....av.oz.	3 1/4
Tamarind.....av.oz.	2
Prunes, sliced.....av.oz.	1 1/2
Figs, bruised.....av.oz.	2 1/2
Sugar, fine powder.....av.oz.	11 1/4
Oil of coriander.....m.	50
Water.....	sufficient.

Place the cassia fistula, tamarind, prune and fig in a covered vessel with 10 fluidounces of water and digest for 3 hours by means of water bath. Separate the coarser portions with the hands, and rub the pulpy mass first through a coarse sieve and then through a fine one or through a muslin cloth. Mix the residue with 3 fluidounces of water and having digested the mixture for a short time, treat it as before and add the product to the pulpy mass first obtained. Then by means of a water bath, dissolve the sugar in the pulpy liquid, and evaporate the whole in a tared vessel until it weighs 18 av. ounces. Lastly

incorporate the senna and oil with the pulpy mixture while the latter is yet warm.—U. S. P.

II.

Senna, fine powder.....av.oz. 1
Simple syrup.....av.oz. 4
Tamarind pulp, purified....av.oz. 5

Mix the senna with the syrup, incorporate the pulp, and warm the whole on a water bath for an hour.—Germ. Pharm.

Confection of Senna, Compound.

Confection of senna....av.oz. 1
Potassium bitartrate.....av.oz. 1/2
Jalap, powder.....gr. 180
Potassium nitrate.....gr. 120
Sulfurgr. 120

Extract of butternut, enough to make a mass of pilular consistence.

This has been used in constipation and in piles in doses of 10 to 15 grains given about twice daily.—Eclectic.

Confection of Sulfur.

I.

Sulfurav.oz. 4
Cream of tartar.....av.oz. 1
Tragacanth, powder.....gr. 18
Tincture of orange, Brit.
Pharm.fl.dr. 4
Glycerinfl.oz. 1 1/2

Mix well.—Brit. Pharm.

II.

Sulfurav.oz. 4
Cream of tartar.....av.oz. 1
Syrup of orange.....fl.oz. 4
Tragacanth, powder.....gr. 18
Mix intimately.—Eclectic.

Confection of Turpentine.

Oil of turpentine.....fl.oz. 1
Licorice root, powder.....av.oz. 1
Honeyfl.oz. 2

Mix the oil and powder, then incorporate the honey.—Eclectic.

Conserves.

In conformity with the custom of the U. S. P., preparations formerly under this title are here classed with the confections.

Copper, Aluminated. (Lapis Divinus. —Augen Stein.)

Copper sulfate, pure.....av.oz. 2
Potassium nitrate.....av.oz. 2
Potassa alum.....av.oz. 2
Camphorgr. 55

Triturate the three salts separately to fine powder, then mix, melt carefully in a porcelain evaporating dish over a hot fire, then quickly add the camphor in a powdered state and previously mixed with an equal weight of powdered alum, and pour the whole out on a porcelain slab.

When cold, it may be broken into pieces or rubbed to powder, and then preserved in well-stoppered bottles.—Germ. Pharm.

Copper, Ammoniated. (Ammonio-Sulfate of Copper.)

Ammonium carbonate.....av.oz. 3
Copper sulfate.....av.oz. 2

Triturate together in a glass mortar until effervescence ceases, then lay between folds of bibulous paper and dry with a gentle heat.—U. S. P. 1870.

Keep in well-stoppered bottles.

Cordials.

The above title is applied to many preparations which vary greatly in character, and could not properly be placed under one heading. Some occur under other more appropriate titles in this book. Consult index.

Cordial, Blackberry. (so-called Blackberry Brandy.)

Blackberry juice.....fl.oz. 24
Cinnamon, No. 40 powder..gr. 580
Clove, No. 40 powder.....gr. 145
Nutmeg, No. 40 powder....gr. 145
Simple syrup.....fl.oz. 24
Diluted alcohol.....sufficient.

Percolate the powdered spices with diluted alcohol to obtain 16 fluidounces of tincture and add to this the blackberry juice. Then add 1/4 av. ounce of purified talcum, set the mixture aside for 24 hours, occasionally shaking, and filter. Wash the filter with sufficient diluted alcohol to obtain 40 fluidounces of filtrate; lastly, add the syrup, and mix well.—N. F.

Cotton, Absorbent. (Purified Cotton, U. S. P.—Gossypium Purificatum.)

Ordinary cotton contains, in addition to the dirt and other matter that accompanies it, some fatty and coloring

matter. The fatty matter does not permit the cotton to absorb water or aqueous fluids to any appreciable extent, and the unpurified is therefore of no value for surgical and pharmaceutical purposes.

There are several methods by which ordinary cotton may be rendered absorbent. An easy process is to wash it repeatedly with ether, which, of course, extracts or dissolves out the fatty matter. The first portions of ether may be economically replaced by gasolin or petroleum ether, finishing the washing with ether so as to avoid the odor of gasolin in the product. By means of this process cotton can be rendered absorbent and be dried in a very few minutes.

The process adopted by manufacturers on the large scale is usually about as follows:

Boil any desired quantity of the best carded cotton with a 5 per cent. solution of caustic potassa or soda for one-half hour, or until the cotton is entirely saturated with the solution,*and the alkali has saponified all the fatty matter; wash thoroughly in clear water to remove all the soap and nearly all the alkali; press out the excess of water; place in a 5 per cent. solution of chlorinated lime, allowing to remain for 15 or 20 minutes; again wash, first in some clear water, then dip in water acidulated with hydrochloric acid, and wash again thoroughly in clear water; press out the excess of water and again boil for 15 or 20 minutes in 5 per cent. alkali solution; now wash well in clear water, dip in water acidulated with hydrochloric acid, and again wash thoroughly in clear water; now press out the water and dry.

Owing to the cellular character of cotton, it is very likely to absorb a liquid and not readily give it up again; hence when cotton is to be well washed, it should be kneaded with the hands or otherwise. In removing excess of water or other liquid, an ordinary clothes-

wringer will be found to serve the purpose admirably. Cotton batting, as purchased, ordinarily occurs in rolled sheets; if care be taken in the above manipulation, the product can be made to retain this "sheet" form.

Medicated Cottons.—These are prepared by impregnating good absorbent cotton by means of immersion in liquid containing the medicating substance. Sometimes a large excess of liquid is employed for impregnation, the excess being removed by subsequent expression; or else only so much is used as that when the whole is taken up by the cotton, the latter will contain the requisite or prescribed amount of medication. In the former case, the expression may be by means of an instrument like an ordinary clotheswringer, conducting the expression so that the liquid which the cotton is allowed to retain will yield a proper strength of finished product. In either case, therefore, the result is identical, and while preference is usually given, in the formulas which follow, to the use of a large amount of liquid, the other process may be substituted, the result always depending more on the care and skill of the operator than on any other circumstances. In impregnating cotton, it may be necessary to knead the latter with the liquid, and sometimes even to macerate for one or two hours; if the small quantity of liquid be used, then the cotton must be weighted down in some convenient manner. In expressing cotton after impregnating in a large quantity of liquid, it may be advisable to wrap the cotton in parchment paper to protect it from the press; if salicylic acid be present, the solution and cotton must not be allowed to come in contact with any iron parts. Cotton must always be passed through the press evenly to medicate uniformly.

Drying of impregnated cotton may be done on screens either in a drying closet or in a room which is dry and perfectly aseptic or clean.

Good absorbent cotton, when dipped in water, will take up or retain, after expression, twice its weight of liquid, each pound of dry cotton yielding therefore three pounds of moist cotton.

All prepared cottons should be kept in suitable receptacles or wrappers such as glass, parchment paper, paraffined paper, paraffined or resin-coated pasteboard boxes, etc., to prevent loss by evaporation or accession of septic matter.

Cotton, Alembroth. (Sal Alembroth Cotton.)

Mercuric chlorid.....	gr. 27
Ammonium chlorid.....	gr. 11
Alcohol	fl.oz. 9½
Distilled water.....	fl.oz. 40
Absorbent cotton.....	av.oz. 16

Immerse the cotton in the solution and press out to the weight of 48 av. ounces; dry in the dark.—D.

Cotton, Aluminum Acetate.

Solution of aluminium acetate	fl.oz. 16
Distilled water.....	fl.oz. 32
Absorbent cotton.....	av.oz. 16

Proceed as with borated cotton.

This makes a 5 per cent. cotton. For a 10 per cent. cotton of the same kind, use 32 fluidounces of solution and 16 of water for the impregnating solution.—Process of Burow (in D.):

Cotton, Antirheumatic. (Gicht Watte.)

I.

This article is sometimes called for Germans:

Oil of birch tar, rectified.....	drops 8
Oil of turpentine, rectified.....	drops 8
Oil of juniper wood.....	drops 8
Oil of clove.....	drops 8
Oil of rosemary.....	drops 8
Camphor	gr. 15
Alcohol	fl.dr. 2
Tincture of capsicum.....	fl.dr. 6
Absorbent cotton.....	av.oz. 16

Dissolve the oils and camphor in the alcohol, filter, and moisten the cotton with the filtrate in any convenient way, as, for example, by means of an atomizer. During this moistening the cotton should be picked into thin layers, and be turned about frequently so as to im-

pregnate evenly. Dry by exposure to atmosphere for one hour, and wrap in waxed paper or other suitable container.—D.

II.

Red saunders.....	gr. 96
Benzoin	gr. 20
Peru balsam.....	gr. 5
Alcohol	fl.dr. 8

Macerate for several days, filter and impregnate cotton with filtrate as in the preceding.—H. Modified.

Cotton, Benzoated.

I. Process of Von Bruns, Jr. (in D.):

3 per cent. 4 per cent.

Benzoic acid..av.oz.	¾	av.oz. 1
Castor oil....av.oz.	½	av.oz. ½
Alcohol, 95 p. c.fl.oz.	58	fl.oz. 58

Absorbent cotton	av.oz. 16	av.oz. 16
5 per cent.	10 per cent.	
Benzoic acid..av.oz.	1¼	av.oz. 2½
Castor oil....av.oz.	1	av.oz. 1
Alcohol, 95 p. c.fl.oz.	58	fl.oz. 55

Absorbent

cottonav.oz.16 av.oz. 16

Dissolve the acid in the alcohol, add the oil, saturate the cotton with this liquid, prepared after any of the given proportions, then press it until it weighs 48 av. ounces, and dry at ordinary temperature.

II. England's process:

Benzoic acid.....	av.oz. 3, gr. 75
Glycerin	av.oz. 2
Water, boiling.....	av.lb. 4
Absorbent cotton.....	av.oz. 16

Dissolve the acid in the water, add the glycerin, and the cotton, allow it to soak up all the liquid, and then dry it.

The glycerin is used to prevent crystallization of the acid.

The product contains 15 per cent. of acid.

Cotton, Borated.

5 per cent.

Boric acid.....	av.oz. 1
Distilled water, hot.....	fl.oz. 37½
Absorbent cotton.....	av.oz. 16

10 per cent.

Boric acid.....	av.oz. 2
Distilled water, hot.....	fl.oz. 36½
Absorbent cotton.....	av.oz. 16

20 per cent.

Boric acid.....av.oz.	4
Distilled water, hot.....fl.oz.	34½
Absorbent cotton.....av.oz.	16

Dissolve the acid in the water, immerse the cotton in the solution, press out to the weight of 48 av. ounces, and proceed as with benzoated cotton.—D.

See Cotton, Benzoated, No. 1.

Cotton, Carbolated.

5 per cent.

Carbolic acid, crystal.....av.oz.	1¼
Castor oil.....av.oz.	½
Resin.....av.oz.	5
Alcohol, 95 per cent.....fl.oz.	50
Absorbent cotton.....av.oz.	16

10 per cent.

Carbolic acid, crystal....av.oz.	2½
Castor oil.....fl.oz.	1
Resin.....av.oz.	7½
Alcohol, 95 per cent.....fl.oz.	47
Absorbent cotton.....av.oz.	16

Dissolve the resin in the mixed oil and alcohol by agitation, filter, impregnate the cotton as before, pressing out to the weight of 48 av. ounces, and drying without heat. Pack immediately in air-tight containers.—Process of Germ. Form. and of Von Bruns, Jr.

Cotton, Ichthyol.

20 per cent.

Ichthyol.....av.oz.	5
Alcohol.....fl.oz.	13½
Distilled water.....fl.oz.	32
Absorbent cotton.....av.oz.	16

50 per cent.

Ichthyol.....av.oz.	12
Alcohol.....fl.oz.	14
Distilled water.....fl.oz.	23
Absorbent cotton.....fl.oz.	16

Dissolve the ichthyol in the alcohol and water, saturate the cotton with the solution, press out to the weight of 48 av. ounces, and dry at a temperature not to exceed 25 degrees C.—D.

The ordinary ichthyol (ammonium compound) is to be used for the above.

Cotton, Iodized.

Iodin.....gr.	700
Absorbent cotton.....av.oz.	16

Place the iodine at the bottom of a wide-mouth glass vial, insert the cotton, tie over the mouth with parchment

paper wetted with glycerin, place the vial in a water-bath of from 50 to 60 degrees C., and continue the heat until all of the iodine has been vaporized and the cotton is evenly impregnated with it. Pack in well-closed glass containers.—D.

The product is called a 10 per cent. cotton; practically it contains but 9 per cent. of iodine.

Cotton, Iodoform.

I. Von Mosetig's process (in D.):

5 per cent.

Iodoform.....av.oz.	1¼
Ether, stronger.....fl.oz.	16½
Alcohol, 95 per cent.....fl.oz.	44
Absorbent cotton.....av.oz.	16

10 per cent.

Iodoform.....av.oz.	3
Castor oil.....av.oz.	1
Resin.....av.oz.	1
Ether, stronger.....fl.oz.	33
Alcohol, 95 per cent.....fl.oz.	36½
Absorbent cotton.....av.oz.	16

20 per cent.

Iodoform.....av.oz.	6
Castor oil.....av.oz.	2
Resin.....av.oz.	2
Ether.....fl.oz.	53
Alcohol, 95 per cent.....fl.oz.	12
Absorbent cotton.....av.oz.	16

Dissolve the iodoform in the ether and alcohol, add the resin and castor oil if they be used, agitate until dissolved, saturate the cotton with the solution, wrap in thin parchment paper, puncture a number of holes along the edge, and press out to the weight of 48 av. ounces. This work must be performed with a certain amount of celerity. Dry in the open air, excluding daylight during the entire operation.

A better mode of preparation for iodoform cotton is to use only so much solution that, when all is absorbed, the fabric will contain the proper proportion.

II. England's process:

Iodoform.....gr.	370
Ether.....fl.oz.	11½
Alcohol.....fl.oz.	30½
Absorbent cotton.....av.oz.	16

Dissolve the iodoform in the ether, add the alcohol, impregnate the cotton

with this liquid so as to take up the whole volume, and then dry it.

The product contains 5 per cent. of iodoform, but can be made stronger if desired.

Cotton, Iodol.

Iodol	av.oz. 2
Glycerin	av.oz. 1½
Alcohol	fl.oz. 42
Absorbent cotton.....	av.oz. 16

Dissolve the iodol in the alcohol with the aid of a gentle heat (50 degrees C.), gradually add the glycerin, saturate the cotton with the solution, kneading thoroughly, and proceed as described under iodoform cotton, pressing out to 48 av. ounces.

The product is a 10 per cent. cotton. A 5 per cent. cotton may be prepared by using a solution composed of 1 av. ounce of iodol, ¾ av. ounce of glycerin and 45 fluidounces of alcohol.—D.

Cotton, Mercuric Chlorid. (Sublimated or Corrosive Sublimate Cotton.)

I. Schede's process (in D.):

¼ and ½ per cent.

Mercuric chlorid.....	gr. 27 or 54
Glycerin	av.oz. 5
Alcohol	fl.oz. 13½
Distilled water.....	fl.oz. 32
Absorbent cotton.....	av.oz. 16

Dissolve the corrosive sublimate in the mixed liquids, filter, and impregnate the cotton as in the preceding, express the cotton until it weighs 48 av. ounces, and dry in the dark at a temperature of about 25 to 30 degrees C.

A 1 in 1000 cotton may be prepared by using 11 gr. of mercuric chlorid.

II. Link and Voswinkel's process (in D.):

¼ per cent.

Mercuric chlorid.....	gr. 27
Lithium chlorid.....	gr. 27
Alcohol	fl.oz. 19½
Distilled water.....	fl.oz. 32
Absorbent cotton.....	av.oz. 16

½ per cent.

Mercuric chlorid.....	gr. 54
Lithium chlorid.....	gr. 54
Alcohol	fl.oz. 19½
Distilled water.....	fl.oz. 32
Absorbent cotton.....	av.oz. 16

Proceed as before and press out to the weight of 48 av. ounces; dry at a temperature of 25 to 30 degrees C.

A 1 in 1000 cotton may be prepared by using 11 gr. each of mercuric and lithium chlorids.

Ordinarily sublimated cotton suffers diminution in strength due to reduction of the mercuric chlorid. This is ascribed to lack of care in preparing the absorbent cotton used, the presence of glycerin and of stearic acid to impart a brilliant whiteness, and creaking sound when pressed between the fingers, etc. The second process is supposed to yield a permanent product. The lithium chlorid is intended to replace the glycerin of other processes.

The formula of the Germ. Form. differs from first one of the above only in that 55 fluidounces of alcohol is employed instead of the mixture of alcohol and water.

III. England's process (modification of Ruemmel's):

Mercuric chlorid.....	gr. 39
Alcohol	fl.oz. 2¼
Glycerin	av.oz. 2
Distilled water.....	av.lb. 4
Absorbent cotton.....	av.oz. 16

Dissolve the chlorid in the alcohol, add the cotton, impregnate the cotton with all the liquid, and dry it.

The product contains ½ per cent. of mercuric chlorid. A 1 in 1000 cotton may be prepared by using 8 gr. of mercuric chlorid.

IV. With tartaric acid, ¼ per cent. (in D.):

Mercuric chlorid.....	gr. 27
Tartaric acid.....	av.oz. ¼
Alcohol	fl.oz. 28½
Distilled water.....	fl.oz. 24
Absorbent cotton.....	av.oz. 16

Proceed according to the usual mode, press out to the weight of 48 av. ounces, and dry under exclusion of daylight.

V. Lister's sero-sublimate or mercury albuminate cotton, ½ per cent. (in D.):

Mercuric chlorid.....	gr. 54
Horseblood serum.....	av.oz. 12½
Distilled water.....	fl.oz. 36
Absorbent cotton.....	av.oz. 16

Dissolve the corrosive sublimate by trituration in the blood serum, add the water, and saturate the cotton with the liquid; press out to 48 av. ounces, and dry at a temperature of 25 to 30 degrees C., light to be excluded.

If horseblood serum cannot be had, dissolve 52 gr. of corrosive sublimate and 210 gr. of sodium chlorid, by trituration with $1\frac{3}{4}$ av. ounces of egg albumen diluted with 45 fluidounces of distilled water, and with this prepare the cotton as before.

Instead of the horseblood serum, there may be used dried albumen from blood which is now commercially available. One-tenth as much of this as of serum should be employed, to be dissolved in 9 times its quantity of water.

This cotton contains mercury in the form of albuminate.

Cotton, Resorcin.

3 per cent.

Resorcin	av.oz. 1
Glycerin	av.oz. $1\frac{1}{4}$
Alcohol	fl.oz. 23
Distilled water.....	fl.oz. $42\frac{1}{2}$
Absorbent cotton.....	av.oz. 16

5 per cent.

Resorcin	av.oz. $1\frac{1}{4}$
Glycerin	av.oz. $1\frac{1}{4}$
Alcohol	fl.oz. $16\frac{1}{2}$
Distilled water.....	fl.oz. 32
Absorbent cotton.....	av.oz. 16

Proceed in the usual manner, pressing out to the weight of 48 av. ounces; dry at a temperature between 25 and 30 degrees C.—D.

Cotton, Salicylated.

I. Process of Von Bruns, Jr. (in D.):

5 per cent.

Salicylic acid.....	av.oz. $\frac{3}{4}$
Castor oil.....	av.oz. $\frac{1}{2}$
Alcohol, 95 per cent.....	fl.oz. 34
Absorbent cotton.....	av.oz. 16

10 per cent.

Salicylic acid.....	av.oz. $1\frac{1}{2}$
Castor oil.....	av.oz. 1
Alcohol, 95 per cent.....	fl.oz. 33
Absorbent cotton.....	av.oz. 16

Dissolve the acid in the alcohol, add the oil, and proceed in the usual way, pressing out to the weight of 48 av.

ounces; dry at a temperature between 25 and 30 degrees C.

II. Thiersch's process (in D.):

4 per cent.

Salicylic acid.....	av.oz. 1
Glycerin	gr. 75
Alcohol	fl.oz. $8\frac{1}{2}$
Distilled water, hot.....	fl.oz. 40
Absorbent cotton.....	av.oz. 16

10 per cent.

Salicylic acid.....	av.oz. $2\frac{1}{2}$
Glycerin	av.oz. $\frac{1}{2}$
Alcohol	fl.oz. 16
Distilled water, hot.....	fl.oz. 32
Absorbent cotton.....	av.oz. 16

Dissolve the acid in alcohol, add the glycerin and water, and proceed as before.

A 5 per cent. cotton may be prepared by using the first of the quantities given but increasing the acid to $1\frac{1}{4}$ av. ounces.

III. England's process modified:

Salicylic acid.....	av.oz. 2
Glycerin	av.oz. 2
Alcohol	fl.oz. 20
Distilled water, hot.....	fl.oz. 16
Absorbent cotton	av.lb. 1

Dissolve the acid in the alcohol, add the glycerin and water, impregnate the cotton with all of the liquid, and dry it.

Contact with metals, particularly iron, should be avoided.

The product contains 10 per cent. of salicylic acid.

Cotton, Styptic. (Hemostatic Cotton.—Ferrated Cotton.)

I.

Absorbent cotton,	
Solution of iron chlorid,	
Glycerin,	
Water.....	each, sufficient.

Mix the liquids in the proportion of 5 parts of the iron solution, 1 part of glycerin, and 4 parts of water by weight, in such quantities that the cotton shall be completely immersed in the liquid when gently pressed. Allow the cotton to remain in the liquid one hour, then remove it, press it until it has been brought to twice its original weight, spread it out in thin layers, in a warm place, protected from dust and light, and when it is sufficiently dry, transfer it to well-closed receptacles.—N. F.

II.

Solution of ferric chlorid, U. S. P.....	f℥.oz. 6¾	or av.oz. 9¾
Glycerin	f℥.oz. 1	or av.oz. 1¼
Distilled water.....	f℥.oz. 19	
Alcohol	f℥.oz. 19	
Absorbent cotton.....	av.oz. 16	

Impregnate and press the cotton in the usual manner; dry with exclusion of daylight, and keep the product in amber-colored bottles.—D.

III.

Solution of iron chlorid	
(Germ. Pharm. sp. gr.	
I.28)	f℥.oz. 9
Glycerin	f℥.oz. 1 or av.oz. 1¼
Water	f℥.oz. 19
Alcohol	f℥.oz. 18½
Absorbent cotton.....	av.oz. 16

Mix the liquids, immerse the cotton therein, then press it until the product weighs 48 av. ounces, and dry it at a gentle heat, with exclusion of light.—Germ. Form.

One hundred parts contain about 25 parts of anhydrous ferric chlorid.

Keep the product protected from light.

The 9 fluidounces of solution of ferric chlorid of the German pharmacopeia used in the last formula corresponds to 7 fluidounces of the U. S. P. solution.
Cotton, Thymol.

	2 per cent.	5 per cent.
Thymol	av.oz. ½	av.oz. 1¼
Resin	av.oz. 1	av.oz. 2½
Spermacei	av.oz. 7	av.oz. 8
Alcohol	f℥.oz. 48	f℥.oz. 44
Absorbent cotton	av.oz. 16	av.oz. 16

Dissolve the solids in the alcohol, saturate the cotton with this solution, the latter being warmed, express to a weight of 48 av. ounces, and spread out to dry.—Ranke's process (in D.).

Culture Fluids. (Nutrient Fluids.)

I. Pasteur's for bacteria (in D.):

Ammonium tartrate.....	gr. 35
Potassium phosphate.....	gr. 5
Sugar	gr. 700
Distilled water.....	f℥.oz. 14¾
Dissolve and filter.	

II. Cohn's for bacteria (in D.):

Ammonium tartrate.....	gr. 100
Ammonium acetate.....	gr. 100

Potassium phosphate	gr. 5
Magnesium sulfate.....	gr. 3
Calcium chlorid, dry.....	gr. 3
Distilled water.....	f℥.oz. 22
Dissolve and filter.	

III. Miquel's for bacteria (in D.):

Peptone	gr. 200
Gelatin	gr. 20
Sodium chlorid.....	gr. 50
Potassium carbonate.....	gr. 5
Distilled water.....	f℥.oz. 22
Dissolve by aid of heat, and filter.	

Culture Medium.

This is a much-used medium:

Agar-agar	gm. 7.5
Peptone (Witte).....	gm. 5
Extract of beef.....	gm. 2.5
Sodium chlorid.....	gm. 2 to 5
Distilled water.....	cc. 500

The ingredients are to be mixed in a porcelain or granite-iron sauce-pan, and boil at a gentle heat until the agar is completely dissolved, care being taken to maintain the exact volume of the mixture by repeated additions of distilled water; remove from the heat, carefully neutralize with a solution of sodium carbonate, and clarify with egg albumen; finally filter in a funnel provided with a steam or hot-water jacket.

In cold weather the proportion of agar may be decreased to 5 grams.

The medium while still hot should be poured into sterilized tubes to the depth of about 1½ inches, the cotton plugs should be replaced, and the tubes be placed in a wire basket and again sterilized as described below for the tubes.

On completing the third day's treatment, the tubes should be removed while still hot and rotated on a block of ice, holding them horizontally so as to leave a film of the culture medium congealed on the sides. Some tubes may be allowed to cool in an inclined position merely, when a thicker stratum of the medium is desired.

For the purpose of cultures, test-tubes 6 inches long and tolerably wide diameter may be used. These should first be washed clean, then rinsed with distilled water, the openings closed

tolerably tight with cotton batting (not absorbent cotton), and then sterilized for 4 or 5 hours on three consecutive days. So long as the cotton is not disturbed, the interior of the tubes remains sterile.

Decoctions. (Decocta.)

The U. S. P. directs that an ordinary decoction, the strength of which is not directed by the physician, shall be prepared according to the following formula:

The substance, coarsely com-
minutedgr. 365
Water, to make.....fl.oz. 16

Put the substance in a suitable vessel provided with a cover, pour upon it 16 fluidounces of cold water, cover it well, and boil for 15 minutes. Then let it cool to about 40 degrees C., express, strain the expressed liquid, and pass enough cold water through the strainer to make the product measure 16 fluidounces.

Caution.—The strength of decoctions of energetic or powerful substances should be specially prescribed by the physician.

All decoctions should be made in porcelain, porcelain-lined or glass vessels.

No decoctions are recognized by the present U. S. P.

Decoction of Aloes, Compound.

(Baume de Vie.)

Extract of aloes.....gr. 72
Myrrhgr. 54
Spanish saffron.....gr. 54
Potassium carbonate.....gr. 36
Extract of licorice, powder..gr. 250
Compound tincture of carda-
momfl.oz. 4
Water, to make.....fl.oz. 16

Reduce the myrrh and extract of aloes to a coarse powder, mix this with the potassium carbonate and extract of licorice in a suitable covered vessel, and pour on 10 fluidounces of water; boil for 5 minutes, and add the saffron. When cool, add the compound tincture of cardamom, and allow the mixture to macerate for 2 hours; then filter through

flannel, and add enough water to make the product measure 16 fluidounces.

This preparation should be freshly made when required.—N. F.

This preparation is original in the Brit. Pharm. The formula of the latest Brit. Pharm. differs from the above in using extract of barbadoes aloes, and in having 36 gr. each myrrh and saffron, 290 gr. of extract of licorice, and 5 fluidounces of compound tincture of cardamom.

Decoction of Barley. (Barley Water.)

Pearl barley.....av.oz. 1½
Distilled water.....fl.oz. 22

Wash the barley with cold water, and reject the washings; boil the washed barley with the distilled water for 20 minutes in a covered vessel, and strain. The product is about 16 fluidounces.—Brit. Pharm. 1885.

Decoction of Broom, Compound.

Broom tops.....gr. 240
Juniper berries.....gr. 240
Dandeliongr. 240
Distilled water.....fl.oz. 24

Mix, boil down to 16 fluidounces, and strain.

Decoction of Cetraria. (Decoction of Iceland Moss.)

Iceland mossgr. 360
Watersufficient.

Cover the moss, in a suitable vessel, with 6½ fluidounces of cold water, let stand for ½ hour, and express, throwing the liquid away. Then boil the moss with 16 fluidounces of water for ½ hour, strain, and add enough cold water through the strainer to make the colature measure 16 fluidounces.—N. F. and U. S. P. 1890.

Decoction of Logwood.

Logwood, chips.....gr. 365
Cinnamon, coarse powder...gr. 55
Distilled water, to make...fl.oz. 16

Boil the logwood with 16 fluidounces of water for 10 minutes in a closed vessel, adding the cinnamon towards the end of the boiling. Strain and add enough distilled water through the strainer to make 16 fluidounces of colature.

Contact with iron and other metals should be avoided.—Brit. Pharm.

Decoction of Pomegranate Root Bark.
(Decoction of *Granatum*.)

I.

Pomegranate bark, cut.....av.oz. $3\frac{3}{4}$
Distilled watersufficient

Add 20 fluidounces of water to the bark, boil for 10 minutes, strain and add, if necessary, enough water through the strainer to make the colature measure 16 fluidounces.—Brit. Pharm.

II.

Physicians of the Eclectic school are said to use this formula:

Drugav.oz. 8
Watergall. 1

Boil the drug well with $\frac{1}{2}$ of the water, strain through muslin and press well. Boil the residue with the remainder of the water, strain again. Mix the two liquids and evaporate to 1 pint.—Eclectic.

This is used as a tenifuge, the directions being as follows:—The patient should fast for one day and on retiring should take two compound cathartic pills, to be followed in the morning on arising by a good dose of Rochelle salt. As soon as there is profuse stool, he should take 2 or 3 fluidounces of the decoction. If the liquid be retained by the stomach, the worm will probably pass with the next stool. If it be rejected, as may be the case, another dose should be given, but not for about 2 hours, to give the stomach a rest.

Decoction of Sarsaparilla.

Sarsaparilla rootoz. 6
Soft water, boiling.....gall. 1

Macerate the root in the water for 2 hours, then remove the root, bruise, add it again to the liquid, macerate for another 2 hours, boil the liquid down to 4 pints, and strain.—Thomsonian (from the *Materia Medica*).

Decoction of Sarsaparilla, Compound.
(Decoction *Sarsæ Compositum*.)

I.

Sarsaparilla, cut and bruised.gr. 720
Guaiac wood, rasped.....gr. 145
Sassafras, coarse powder....gr. 145

Licorice root, bruised.....gr. 145
Mezereum, cut and bruised..gr. 73
Water, to make.....fl.oz. 16

Boil the sarsaparilla and guaiac for $\frac{1}{2}$ hour in a suitable vessel with 16 fluidounces of water, then add the other ingredients, cover the vessel well, macerate for 2 hours, strain, and add enough cold water through the strainer to make 16 fluidounces of product.—N. F. Appendix and U. S. P. 1890.

II.

Sarsaparilla, cut moderately fine
.....gr. 280
Senna, cutgr. 70
Licorice root, cut.....gr. 30
Anise, bruisedgr. 15
Fennel, bruisedgr. 15
Potassa alumgr. 15
Sugargr. 15
Watersufficient

Mix the sarsaparilla with 17 fluidounces of water, heat to 35 or 40 deg. C. and maintain at this temperature for 24 hours. Then add the sugar and alum, and expose, in a covered vessel, to the heat of the boiling water bath, for 3 hours, stirring frequently. Now add the senna, anise and fennel, heat for 15 minutes more, strain with expression, allow to stand for a short time, decant the clear liquid from the sediment, and to the former add enough water to make the product weigh 16 av. ounces.—Germ. Pharm.

III.

Sarsaparilla, Jamaica, cut
transverselygr. 910
Sassafras, chipsgr. 92
Guaiac wood, rasped.....gr. 92
Licorice root, bruised.....gr. 92
Mezereum, cut and bruised..gr. 92
Distilled water, boiling....fl.oz. 24

Digest the solid ingredients in the water for an hour, boil for 10 minutes in a covered vessel, cool and strain, pouring distilled water on the strainer, if necessary, to make 16 fluidounces.—Brit. Pharm. 1885.

This preparation is not recognized in the Brit. Pharm. 1898, but in its stead is what is called "concentrated compound solution of sarsaparilla," which is 8 times the strength of the above and

from which the above may be prepared by diluting one volume with 7 volumes of water. It is prepared by infusing 16¾ av.ounces of Jamaica sarsaparilla, in three successive portions of 5 pints each of distilled water, for one hour each, at 70 deg. C. Boil 730 grains each of sassafras, guaiac wood, licorice root, and mezereum with distilled water until exhausted. Rapidly concentrate the mixed infusion and decoction until, when cold, the liquid measures 12¾ fluidounces. To this add 3½ fluidounces of alcohol, set aside for at least 14 days, and filter. The product should measure 16 fluidounces.

IV. Thomsonian (from the *Materia Medica*):

Sarsaparilla root, cut and bruised	oz. 6
Sassafras bark'	oz. 1
Guaiac wood, cut	oz. 1
Licorice root	oz. 1
Water	pints 10

Bruise the drugs, mix with the water, steep over gentle fire for 6 hours, then boil down the liquid to 5 pints, and strain.

Diluted alcohol would now be substituted for the high wines.

Decoction of Sarsaparilla, Compound Stronger. (Zittmann's Decoction. — Zittmann's Stronger Decoction.)

The preparation of 2nd Germ. Pharm. of the above name is the same as that known in the present (3rd) Germ. Pharm. as compound decoction of sarsaparilla. See Decoction of Sarsaparilla, Compound.

The formula of the 1st Germ. Pharm. was similar; 18 grains each of sugar and alum were directed, also 12 grains each of anise and fennel, and 35 grains of licorice root. It was further directed, however, in this work that when Decoctum Zittmanni is prescribed, it should be prepared in a similar manner except that to the sugar and alum should be added 12 grains of calomel and 3 grains red sulfid of mercury, enclosed in a linen bag.

The formula given last is an unsci-

entific one, but contains mercury in some form, unless the process has been conducted in metallic vessels, and hence is often preferred on this account.

Decoction of Sarsaparilla, Comp'd, Weaker. (Zittmann's Weaker or Milder Decoction.)

The present (3rd) Germ. Pharm. does not recognize this preparation, but the 2nd and 1st did recognize it. The formula of the 2d edition was as follows:

Sarsaparilla, cut	gr. 140
Lemon peel, cut	gr. 15
Cinnamon, bruised	gr. 15
Cardamom, bruised	gr. 15
Licorice root, cut	gr. 15
Water	sufficient

Macerate the sarsaparilla with 15 fluidounces of water for 24 hours, then heat in a covered vessel on a boiling water bath for 3 hours, stirring occasionally; add the other ingredients, macerate for 15 minutes, strain the liquid with expression, allow the decoction to settle, pour off the clear liquid, and add enough water to make it weigh 16 av.ounces.

The formula of the 1st Germ. Pharm. was slightly different, as follows:

Residue from the stronger decoction	
Sarsaparilla, cut fine	gr. 140
Cardamom, bruised	gr. 8
Cinnamon, bruised	gr. 8
Lemon peel, cut	gr. 8
Licorice root, cut	gr. 8
Water	fl.oz. 17

Mix the residue above specified with the sarsaparilla, and boil the whole with the water in a covered vessel on a steam or boiling water bath for 3 hours. Near the end of this time add the remaining drugs; allow to cool, strain, set aside to settle, and decant the clear liquid. The product should weigh about 16 fluidounces.

The present Austr. Pharm. recognizes both the stronger and the weaker compound decoctions of sarsaparilla.

Dilutions, Homeopathic. (Liquid Attenuations.)

The homeopathic process of dilution by means of a progressive scale of 1 part of tincture to 100 parts of vehicle, known as the centesimal scale, was rec-

ommended by Hahnemann, the father of homeopathy, and adopted by him as the standard. Under this rule, each attenuation contained just 1/100 part as much of the drug substance as the preceding attenuation. In order to secure intermediate grades of strength, there has since been introduced the method of diluting in the proportion of 1 in 10, instead of 1 in 100, this constituting the decimal scale. The great advantage of the latter has led to its replacement, to a very great extent, for the centesimal scale. The decimal scale is the only one recognized by the present authority of American homeopaths, the Pharmacopeia of the American Institute of Homeopathy, and hence only this one will be recognized in this work.

The centesimal scale of dilution or trituration is indicated by numbers affixed to the name of the medicament, e. g., belladonna 1, belladonna 2, etc., meaning respectively the first centesimal and the second centesimal dilution or trituration. Or the centesimal scale is also indicated by adding "c," viz., belladonna .1c, belladonna 2c, etc. The decimal scale is indicated by numbers to which is affixed an "x," viz., belladonna 1x, belladonna 2x, etc., so that belladonna 1 is equal to belladonna 2x.

Attenuation or expansion is accomplished in the process of dilution by the addition of the diluent or vehicle (menstruum) to the liquid or the solid which is to be attenuated.

In the decimal scale the original quantity of medicine is diluted progressively by ten so that the first dilution (1x) contains 1/10, the second dilution (2x) contains 1/100, the third dilution (3x) 1/1000, etc., of the original medicine. As solutions and tinctures are to be made, according to the above-mentioned homeopathic standard work, so that 1 part of drug is to be contained in every 10 parts of the diluent, each tincture or solution (with some few exceptions) is equal or equivalent to the first decimal

dilution (1x). The exceptions are such sparingly soluble substances as phosphorus, arsenic, sulfur, etc., which require more solvent, and in such cases the product should contain 1 part of drug in 100 parts, or in 1000 parts, of diluent, dependent on the degree of solubility, and this product is therefore the second decimal (2x) or the third decimal (3x) dilution.

The method of making each dilution, after the original solution or tincture has been prepared, is to take 1 volume of the liquid to be diluted and to add 9 volumes of diluent or vehicle (usually alcohol). The first dilution thus diluted makes the second dilution, the second forms the third, and so on.

Dilutions may be made from triturations if desired (a trituration of any strength to make a dilution of the next higher attenuation), provided it is a trituration of a substance soluble in alcohol or water. The preferred rule, however, is to use soluble substances for dilutions and insoluble substances for triturations. See Triturations.

The menstruum to be used in making each dilution will be stated under the respective tincture or solution, which see, in each case, under Tinctures and Solutions.

Discs. (Lamellae.)

These are prepared by adding to a concentrated solution of gelatin some glycerin and a solution of a medicating ingredient. While hot this is poured on a perfectly level plate of glass or porcelain, which has previously been very slightly greased, and after drying the discs are cut out from the sheet, each disc to weigh about 1/50th to 1/30th grain. The discs of the British Pharm. are used only in ophthalmic practice. They are as follows:

Discs of Atropine, each containing 1/5000th grain of atropine sulfate.

Discs of Cocaine, each containing 1/50th grain of cocaine hydrochlorid.

Discs of Homatropine, each contain-

ing 1/100th grain of homatropine hydrobromid.

Discs of Physostigmine, each containing 1/1000th grain of physostigmine sulfate.

The cocaine discs should weigh about 1/30th grain; the others should weigh about 1/50th grain.

Each disc will be about 1/25 inch in thickness.

Disks, Homeopathic.

See Medications, Homeopathic.

Douche, Nasal.

Boric acidgr. 60
Glycerite of tannin.....fl.oz. 1½
Oil of wintergreen.....drops 10
Water, to make.....fl.oz. 4
—New York Hospitals.

Dressings, Surgical.

Descriptions of the methods for preparing the various kinds of surgical dressings may be found under the titles Bandages, Plaster Paris; Catgut Ligatures; Cottons; Flannel; Gauzes; Jutes; Lint; Oakum; Silk Ligatures; Silk Protective; Soap, Surgical; Sponges, Medicated; and Wood Wool.

Drops. (Guttæ.)

Preparations popularly known as "drops" vary considerably in character. Some are grouped here, others may be found in other and more appropriate places in this work. Consult the index for the latter.

Some of the many popular German and Scandinavian "drops" are mentioned here, but whether the equivalents are always correct is doubtful, as different preparations are dispensed under the same name in different parts of the country of their origin and in different parts of this country.

Many of the "drops" are spirits, i. e., alcoholic solutions of volatile oils, for example, "peppermint drops."

Drops, Anti-Emetic.

Capsicum, powderav.oz. 1
Saltgr. 240
Vinegarfl.oz. 16
Waterfl.oz. 16

This is to be used in vomiting or nau-

sea in doses of a tablespoonful as often as required.—Eclectic.

Drops, Bitter. (Beska or Bitre Draaber.)

For this Scandinavian preparation is to be dispensed compound tincture of wormwood (see Tincture of Wormwood, Compound) or tincture amara (see Tincture, Bitter, No. IV). Sometimes tincture of wormwood is dispensed but the former is the proper "bitre draaber."

Drops, Brown.

Tannic acidgr. 10
Sodium borategr. 10
Glycerinfl.dr. 1
Camphor water, to make....fl.oz. 1

Use as eye drops.—New York Hospitals.

Drops, Camphor. (Kampfer Draaber.)

This is the same as Spirit of Ether, Camphorated, which see.

Drops, Cholera.

Various preparations commonly known by this title will be found under Mixtures.

Drops, Cinnamon. (Kanel Draaber.)

For the Scandinavian "Kanel Draaber," tincture of cinnamon is to be dispensed. The Scandinavian preparation is stronger than the U. S. P., ¾ av.ounces to be made into 1 pint of tincture with diluted alcohol.

The "Sure Kanel Draaber" (sour cinnamon drops) is tinctura aromatica acidæ, which is practically aromatic sulfuric acid.

Drops, Cramp.

For Krampf Tropfen it is customary to dispense tincture of valerian or ethereal tincture of valerian, usually the former.

For the "red" cramp drops, also known as Herzstaerkungs Tropfen and Tinctura Apoplectica, one of the following mixtures may be dispensed:

I.
Aromatic tincturefl.dr. 4
Tincture of catechufl.dr. 4
Tincture of cinnamon.....fl.dr. 4
Red saunders, rasped.....gr. 64

Waterfl.oz. 2
 Alcoholfl.oz. 5
 Spirit of ether.....fl.oz. 7
 Macerate for several days, and strain through cotton.—H.

II.

Oil of peppermint.....drops 3
 Oil of anise.....drops 5
 Oil of cinnamon.....drops 8
 Chloroformfl.dr. ½
 Tincture of catechu.....fl.oz. 1
 Aromatic tincturefl.oz. 2
 Waterfl.oz. 2
 Spirit of ether.....fl.oz. 5
 Alcoholfl.oz. 5½
 —H.

For the "white" cramp drops, spirit of ether should be dispensed.

For the cramp drops of Scandinavians is to be dispensed a mixture of equal parts of solution of ammonium succinate and Hoffmann's drops.

Drops, Dysmenorrhœa. (Guttæ ad Menstrua Tormentosa, Rade-macher's.)

Tincture of nux vomica....fl.oz. 1
 Alcoholfl.oz. 1
 Tincture of castor.....fl.oz. 2
 —H.

Drops, Family, Yellow.

Opiumav.oz. 1
 Spanish saffronav.oz. 1¼
 Castile soapav.oz. 8
 Oil of rosemary.....fl.oz. 2½
 Oil of origanum.....fl.oz. 1
 Camphorav.oz. 1
 Alcoholfl.oz. 14½

Macerate the opium, saffron and soap with the alcohol for 7 days, agitating occasionally, then add the oils and camphor, dissolve, and filter in a well-covered funnel.

This is said to be used in some portions of the East.

Drops, Gold. (Gold Tropfen or Tinctur.—Golden Tincture.—Tinctura or Essentia Dulcis.)

Potassium acetateav.oz. ¼
 Caramelgr. 90
 Spirit of hydrochloric ether (of ethyl chlorid)fl.oz. 1½
 Acetic etherfl.dr. 2
 Simple syrupfl.oz. 1½
 Waterfl.dr. 2
 Alcoholfl.oz. 12

Dissolve the caramel in the water and add the other ingredients.—H. modified.

Sometimes other preparations are dispensed for gold drops or golden tincture, such as aromatic or bitter tincture. Spirit of ether is used, so is also compound spirit of ether tinted with saffron, and also this mixture:

Alcoholfl.oz. 7½
 Etherfl.oz. 7½
 Solution of iron chlorid.....fl.oz. 1

The ethereal tincture of iron chlorid, N. F., is also known as Lamotte's Gold Drops (or elixir of gold), and this is what may be desired when "gold drops" are requested.

Still other formulas which are used are the following:

Etherfl.oz. 2
 Alcoholfl.oz. 2
 Tincture of opium.....fl.oz. 2
 Chloroformfl.oz. 1

Another formula is like the above, but has only ½ fluidounce of chloroform.

A preparation like either of these latter two must not be dispensed for gold drops or golden tincture unless it is quite certain that such a mixture is wanted.

An eclectic preparation called golden tincture is made as follows:

Tolu balsamav.oz. ¼
 Guaiac resinav.oz. ¼
 Hemlock gum (Canada pitch)av.oz. ¼
 Myrrhav.oz. ¼
 Oil of hemlock.....fl.dr. 3
 Oil of wintergreen.....fl.dr. 2
 Alcoholfl.oz. 16

Reduce the solids to coarse powder, mix all, macerate for 14 days, agitating frequently, and filter.

The dose is a teaspoonful. It is recommended for rheumatism, colic, and stomach, pains in the chest or stomach, languor, etc.

Drops, Heart-Strengthening. (Herztaerkungs Tropfen.—Hjertestyrkende Draaber.)

If asked for by Germans, dispense red cramp drops. See Drops, Cramp.

If asked for by Scandinavians, dispense a mixture of compound tincture of lavender and spirit of ether.

Drops, Hoffmann's. (Weisse Mutterkrampftropfen.)

See Spirit of Ether.

Drops, Hoffmann's, Red.

For the "red" Hoffmann's drops of Scandinavians, the following is to be dispensed:

Oil of amber, rectified.....m.	15
Oil of clove	m. 25
Oil of cinnamon.....m.	25
Oil of lavender.....m.	25
Oil of mace.....m.	25
Peru balsam	gr. 40
Alkanet root	gr. 40
Alcohol	fl.oz. 15½

Mix, macerate for several days, and filter.

Drops, Hot.

Used in New York Hospitals:

Tincture of opium.....fl.oz.	1
Tincture of capsicum.....fl.oz.	1
Spirit of camphor.....fl.oz.	1
Spirit of peppermint.....fl.oz.	1
Water	fl.oz. 4

See also Tincture of Capsicum and Myrrh.

Drops, Jesuit's. (Guttae Jesuitarum.)

Guaiac resin, powder.....av.oz.	¾
Sassafras bark, cut.....av.oz.	2½
Peru balsam	gr. 75
Water	fl.oz. 5
Alcohol	fl.oz. 13

Mix, macerate for 7 days, agitating occasionally, and filter.—H.

Jesuit's Drops is also an old name for Friar's Balsam and for which compound tincture of benzoin is now usually dispensed. See Balsam, Friar's, and Tincture of Benzoin, Compound.

Drops, Mother. (Mutter Tropfen.—Moder Draaber.)

Tincture of cinnamon or of valerian is dispensed as mother drops (when asked for by Germans), also Nos. I or II given under Drops, Cramp, which see. "Red" mother drops is properly aromatic tincture.

The following is also dispensed as "mother drops" in this country:

Crocatated tincture of opium...fl.oz.	4
Fluid extract of valerian...fl.oz.	4
Spirit of ether.....fl.oz.	8

Compound tincture of zedoary is also used.

For the Norwegian "moder draaber," dispense either antihysteretic tincture, thebaic tincture of castor, or the following:

Tincture of castor.....fl.oz.	4
Spirit of ether.....fl.oz.	4
Tincture of cinnamon.....fl.oz.	8

Or a mixture of 3 volumes of tincture of cinnamon and 1 of tincture of castor is used.

Scandinavians also use a mixture of 1 fluidounce each of camphorated spirit of ether and tincture of castor (Tincture of Castor, No. II) and 10 fluidounces of tincture of asafetida.

For the "white" mother drops, dispense spirit of ether or compound spirit of melissa.

Drops, Nerve.

See Spirit of Ether, Camphorated.

Drops, Pectoral.

See Tincture, Pectoral.

Drops, Prince's. (Prinsen's Aekta Draaber.)

This is Solution of Ammonium Succinate, which see.

Drops, Red, Hunter's.

Mercuric chlorid	gr. 10
Hydrochloric acid.....drops	12
Compound spirit of lavender	fl.oz. 1

Mix and dissolve.—Eclectic.

Wine of antimony may be substituted for the compound spirit of lavender.

Drops, Rhubarb. (Rhabarber Draaber.)

The "Rhabarber Draaber" of the Norwegian Pharm. is to be prepared as follows:

Rhubarb, cut	av.oz. 2
Sodium bicarbonate	gr. 100
Water	fl.oz. 16
Cinnamon water	fl.oz. 2½

Macerate the rhubarb and sodium bicarbonate with the water for 12 hours, strain, and to 13½ fluidounces of the colature add the cinnamon water.

Drops, Stomach. (Bitter Stomachic Drops.—Magen Tropfen.)

See Tincture, Bitter, which is dispensed for Magen Tropfen or Bittere Magen Tropfen.

For the so-called Danziger Magen Tropfen is dispensed either compound elixir of orange (compound wine of orange, N. F.) or aromatic tincture.

For "white" stomach drops, dispense spirit of ether.

Effervescent Salts.

See Salts, Effervescent.

Electuaries.

In conformity to the practice of the U. S. P., these preparations have been placed under "Confections."

Elixirs.

The presentation of this multitudinous array of elixirs perhaps requires an explanation. The catalogues of the large manufacturers list all of the elixirs herein mentioned, and this fact indicates a demand for them. In order, therefore, that retail pharmacists may supply this demand without recourse to the manufacturer or the wholesaler, we have given reliable formulas for these preparations. The elixirs of the N. F., U. S. P., and other standard American works are also included.

"Elixoid" is a term used to some extent in Great Britain instead of elixir.

Under the heading "elixirs," the National Formulary has the following general remarks: "The elixirs for which formulas are given in this formulary should, without exception be perfectly clear when dispensed. In most formulas ample provision is made for securing preparations that will be, and will remain, satisfactory in this respect. If, however, for any reason an elixir shall become turbid on keeping, it must be filtered through paper or otherwise clarified. To secure a brilliantly clear filtrate it is recommended to shake the turbid elixir with a little purified talc, before filtration, about 3 or 4 drams sufficing for 32 fluidounces.

While it is manifestly obligatory to use for all medicinal preparations only material of accepted purity and quality, it is worth remembering that no class of preparations calls for greater care in

the selection than does that of elixirs and that this is particularly true with regard to the flavoring ingredients (the volatile oils) which must be absolutely fresh and of reliable quality if a satisfactory product is the desideratum.

Elixirs should not be exposed to extremes of temperature; they should be kept as near as practicable at the ordinary room temperature."

Elixir, Adjuvant.

I.

Fl. ext. of licorice.....fl.oz. 2
Aromatic elixirfl.oz. 14½
Mix and filter if necessary.—U. S. P.

II.

Corianderav.oz. ½
Carawayav.oz. ½
Sweet orange peel.....av.oz. 1
Wild cherryav.oz. 2
Licorice root, Russian, peeled
.....av.oz. 4
Simple syrupfl.oz. 20
Alcohol, water, each, to make fl.oz. 60

Reduce the wild cherry to a moderately coarse powder, moisten it with 2½ fluidounces of water, and set aside for 12 hours. Reduce the other solids also to a moderately coarse powder, mix this intimately with the wild cherry, and having mixed 1 volume of alcohol with 2 of water, moisten the powder with 2½ fluidounces of the mixture, and pack tightly in a percolator. Then gradually pour menstruum on top until 40 fluidounces of percolate are obtained. Mix this with the syrup and filter.—N. F. (1st edition.)

This preparation is intended as a vehicle particularly for acrid or saline remedies.

Elixir of Acetanilid.

This formula may be used:

Acetanilidav.oz. 1
Alcoholfl.oz. 5
Glycerinfl.oz. 4
Tincture of sweet orange peel
to makepint 1

Reduce the acetanilid to fine powder and agitate it with the alcohol until dissolved; then add the glycerin with 4 fluidounces of the tincture of orange

and make up to 16 fluidounces with the same tincture.

Each fluidram contains about $3\frac{1}{2}$ gr. of acetanilid.

Elixir of Aletris. (Elixir of Star-grass or Unicorn Root.)

Fluid extract of aletris

farinosafl.oz. 2

Simple elixirfl.oz. 14

Mix, let stand for several days, and filter.

Each fluidram represents $7\frac{1}{2}$ grains of aletris farinosa (unicorn root or star-grass).

The formula of the Brit. Form. is as follows:

Fluid extract of aletris, Brit.

Pharm.fl.oz. 4

Liquid extract of licorice,

Brit. Pharm.fl.oz. 1

Tincture of orange, Brit.

Pharm.fl.oz. 1

Simple syrupfl.oz. 6

Distilled water, to make....fl.oz. 16

Elixir, Aletris, Compound.

Aletris (star-grass or unicorn root)av.oz. 1

Wintergreenav.oz. 1

Catnipav.oz. $\frac{1}{2}$

Cramp barkav.oz. $\frac{1}{2}$

Blue cohoshav.oz. $\frac{1}{4}$

Cinnamongr. 60

Bitter orange peel.....gr. 30

Carawaygr. 15

Sugarav.oz. 5

Alcoholfl.oz. 5

Water, to make.....fl.oz. 16

Reduce the drugs to moderately coarse powder, and extract by percolation in the usual manner, using as menstruum a mixture of the alcohol with an equal volume of water. When this menstruum has passed through the mixed drugs, follow with water until 13 fluidounces of percolate are obtained. In this dissolve the sugar by agitation, add enough water to make 16 fluidounces, and filter.—Cinc. Acad. Pharm.

Several manufacturers make a compound elixir of aletris, all of which differ from each other and from the above.

Elixir of Aloes, Acid. (Elixir Proprietatis Paracelsi.)

Aloes, coarse powder.....av.oz. 1

Myrrh, coarse powder.....av.oz. 1

Saffron, Spanish, cut fine..av.oz. $\frac{1}{2}$

Alcoholfl.oz. 15 $\frac{1}{2}$

Diluted sulfuric acid.....fl.oz. 1

Mix, macerate for 8 days, occasionally, and filter.—D.

A quick process is to mix 10 fluidounces of tincture of aloes and myrrh, 5 of tincture of saffron, and 1 of diluted sulfuric acid.—H. modified.

Tincture of aloes and myrrh is usually, but mistakenly, dispensed for elixir proprietatis Paracelsi.

Elixir of Aloin, Belladonna and Strychnine, Compound.

Aloingr. 16

Podophyllin.....gr. 16

Fluid extract of belladonna

leavesm. 80

Strychnine sulfategr. 1 $\frac{1}{2}$

Distilled waterfl.dr. 2

Alcoholfl.oz. 2

Simple elixir, to make.....fl.oz. 16

Dissolve the alkaloidal salt in the water by the aid of heat, the podophyllin in the alcohol, the aloin in a portion of the elixir, mix all, add the remaining ingredients, and filter if necessary.

Each fluidram contains $\frac{1}{8}$ gr. each of aloin and podophyllin, about $\frac{1}{80}$ gr. of strychnine sulfate, and represents about $\frac{1}{2}$ gr. of belladonna leaf.

Elixir of Aloin and Strychnine.

Aloingr. 32

Strychnine sulfategr. 2

Simple elixirfl.oz. 16

Dissolve the alkaloidal salt in the elixir by trituration in a mortar, or agitation in a bottle; add the aloin, agitate until dissolved, and filter if necessary.

Each fluidram contains $\frac{1}{4}$ gr. aloin, and $\frac{1}{64}$ gr. strychnine sulfate.

Elixir of Aloin, Strychnine and Belladonna.

Fluid extract of belladonna

rootm. 64

Elixir of aloin and strychnine, to make.....fl.oz. 16

Each fluidram contains $\frac{1}{4}$ gr. of aloin, and $\frac{1}{64}$ gr. of strychnine, and represents $\frac{1}{2}$ gr. of belladonna root.

Elixir of Ammonium Bromid.

Ammonium bromidgr. 640

Aromatic elixir, to make....fl.oz. 16

Dissolve the ammonium bromid in enough of the elixir to make 16 fluid-ounces, and filter if necessary.

Each fluidram contains 5 gr. of ammonium bromid.—N. F.

Elixir of Ammonium Chlorid and Licorice, Compound.

Ammonium chloridgr. 640
Compound elixir of licorice,
to makefl.oz. 16

Dissolve by agitation, and filter if necessary.

Each fluidram contains 5 gr. of ammonium chlorid.

Elixir of Ammonium Valerianate.

I.

Ammonium valerianategr. 256
Chloroformm. 10
Tincture of vanilla.....fl.dr. 2
Compound tincture of cud-
bearfl.dr. 2
Ammonia watersufficient
Aromatic elixir, to make..fl.oz. 16

Dissolve the ammonium valerianate in about 1 fluidounce of aromatic elixir, in a graduated vessel, and add enough water of ammonia, in drops, until a faint excess of it is perceptible in the liquid; then add the chloroform, tincture of vanilla, and compound tincture of cudbear, and finally enough aromatic elixir to make 16 fluidounces. Filter if necessary.—N. F.

Each fluidram contains 2 gr. of ammonium valerianate.

Should the odor of valerianic acid become perceptible after the elixir has been kept for some time, it may be overcome by slightly supersaturating with ammonia water.

II. Goddard's formula, modified:

Valerianic acid, from the
rootfl.dr. 3
Ammonium carbonate ...sufficient
Distilled waterfl.oz. 4
Elixir of curacao.....fl.oz. 10
Orange flower water.....fl.oz. 4
Mucilage of gum arabic...fl.oz. 1
Tincture of cudbear.....fl.dr. 2

Add the acid to the water and neutralize with ammonium carbonate; mix with the other ingredients, and filter.

Elixir of Ammonium Valerianate and Chloral Hydrate.

Chloral hydrategr. 640
Elixir of ammonium valeria-
nate, to make.....fl.oz. 16

Dissolve by agitation and filter if necessary.

Each fluidram contains 5 gr. of chloral hydrate and 2 gr. of ammonium valerianate.

Elixir of Ammonium Valerianate with Cinchonidine.

Cinchonidine sulfategr. 64
Elixir of ammonium valeria-
nate, to make.....fl.oz. 16

Dissolve by agitation. The elixir of ammonium valerianate employed in making this preparation should be exactly neutral.

Each fluidram contains $\frac{1}{2}$ gr. of cinchonidine sulfate and 2 gr. of ammonium valerianate.

Elixir of Ammonium Valerianate, Cinchonidine and Iron Pyrophosphate.

Iron pyrophosphate, soluble..gr. 64
Distilled water, hot.....fl.dr. 4
Elixir of ammonium valeria-
nate with cinchonidine,
to makefl.oz. 16

Dissolve the iron salt in the water and add the elixir of ammonium valerianate with cinchonidine.

Each fluidram contains nearly 2 gr. of ammonium and $\frac{1}{2}$ gr. of cinchonidine sulfate, as well as $\frac{1}{2}$ gr. of iron pyrophosphate.

Elixir of Ammonium Valerianate with Cinchonidine, Iron Pyrophosphate and Quinine.

Iron pyrophosphate, soluble..gr. 64
Distilled water, hot.....fl.dr. 4
Elixir of ammonium valeria-
nate, with cinchonidine and
quinine, to make.....fl.oz. 16

Dissolve the iron salt in the water and add the elixir.

Each fluidram contains nearly 2 gr. of ammonium valerianate, $\frac{1}{2}$ gr. of cinchonidine sulfate, and $\frac{1}{4}$ gr. of quinine hydrochlorid, as well as $\frac{1}{2}$ gr. of iron pyrophosphate.

Elixir of Ammonium Valerianate with Cinchonidine, Iron Pyrophosphate, Quinine and Strychnine.

Strychnine sulfategr. $1\frac{1}{4}$
 Distilled waterf.dr. 2
 Elixir of ammonium valerianate, cinchonidine, iron pyrophosphate, and quinine, to makef.oz. 16

Dissolve the strychnine salt in the water and add the elixir.

Each fluidram contains 2 gr. of ammonium valerianate, $\frac{1}{2}$ gr. each of cinchonidine sulfate and iron pyrophosphate, and 1/100 gr. of strychnine sulfate.

Elixir of Ammonium Valerianate with Cinchonidine, Iron Pyrophosphate and Strychnine.

Strychnine sulfategr. $1\frac{1}{4}$
 Distilled waterf.dr. 2
 Elixir of ammonium valerianate, cinchonidine and iron pyrophosphate, to make...f.oz. 16

Dissolve the strychnine sulfate in the water, and add the elixir.

Each fluidram contains nearly 2 gr. of ammonium valerianate, $\frac{1}{2}$ gr. of cinchonidine sulfate and $\frac{1}{2}$ gr. of iron pyrophosphate, as well as 1/100 gr. of strychnine sulfate.

Elixir of Ammonium Valerianate with Cinchonidine and Quinine.

Quinine hydrochlorid.....gr. 32
 Cinchonidine sulfate.....gr. 64
 Elixir of ammonium valerianate, enough to make...f.oz. 16
 Mix, dissolve by agitation and filter.

Each fluidram contains 2 gr. of ammonium valerianate, $\frac{1}{2}$ gr. of cinchonidine sulfate and $\frac{1}{4}$ gr. of quinine hydrochlorid.

Elixir of Ammonium Valerianate with Cinchonidine, Quinine and Strychnine.

Strychnine sulfate.....gr. $1\frac{1}{4}$
 Distilled waterf.dr. 2
 Elixir of ammonium valerianate with cinchonidine and quinine, to make.....f.oz. 16

Dissolve the strychnine in the water and add the elixir.

Each fluidram contains 2 gr. of ammonium valerianate, $\frac{1}{2}$ gr. of cinchoni-

dine sulfate, $\frac{1}{4}$ gr. of quinine hydrochlorid and 1/100 gr. of strychnine sulfate.

Elixir of Ammonium Valerianate with Cinchonidine and Strychnine.

Strychnine sulfate.....gr. $1\frac{1}{4}$
 Distilled waterf.dr. 2
 Elixir of ammonium valerianate with cinchonidine, to makef.oz. 16

Dissolve the strychnine sulfate in the water, add the elixir and filter if necessary.

Each fluidram contains 1/100 gr. of strychnine sulfate, $\frac{1}{2}$ gr. of cinchonidine sulfate and 2 gr. of ammonium valerianate.

Elixir of Ammonium Valerianate and Iron.

Iron pyrophosphate, soluble..gr. 128
 Distilled water, hot.....f.oz. 1
 Elixir of ammonium valerianatef.oz. 15

Dissolve the iron salt in the water and add the elixir.

Each fluidram contains 1 gr. of iron pyrophosphate and 2 gr. of ammonium valerianate.

Elixir of Ammonium Valerianate with Iron and Quinine.

Quinine hydrochlorid.....gr. 32
 Iron pyrophosphate, soluble..gr. 64
 Distilled water, hot.....f.dr. 4
 Elixir of ammonium valerianate, to make.....f.oz. 16

Add the quinine salt to 15 fluidounces of elixir, dissolve by agitation, dissolve the iron salt in the water, mix the two solutions, and add the remainder of the water.

Each fluidram contains $\frac{1}{4}$ gr. of quinine hydrochlorid, $\frac{1}{2}$ gr. of iron pyrophosphate and 2 gr. of ammonium valerianate.

Elixir of Ammonium Valerianate with Iron, Quinine and Strychnine.

Strychnine sulfate.....gr. $1\frac{1}{4}$
 Distilled waterf.dr. 2
 Elixir of ammonium valerianate with iron and quinine, to make.....f.oz. 16

Dissolve the strychnine sulfate in the

water and add the elixir.

Each fluidram contains 2 gr. of ammonium valerianate, $\frac{1}{4}$ gr. of quinine hydrochlorid, $\frac{1}{2}$ gr. of iron pyrophosphate and 1/100 gr. of strychnine sulfate.

Elixir of Ammonium and Morphine Valerianates.

Morphine valerianate.....gr. 8

Elixir of ammonium valerianatefl.oz. 16

Dissolve by agitation. The elixir of ammonium valerianate used in making this preparation should not be alkaline.

Each fluidram contains 1/16 gr. of morphine valerianate and 2 gr. of ammonium valerianate.

Elixir of Ammonium Valerianate and Quinine.

Quinine hydrochlorid.....gr. 32

Elixir of ammonium valerianate, N. F.....fl.oz. 16

Dissolve the quinine hydrochlorid in the elixir, and filter if necessary.

Each fluidram contains $\frac{1}{4}$ gr. of quinine hydrochlorid and 2 gr. of ammonium valerianate.—N. F.

Elixir of Ammonium, Quinine and Strychnine Valerianates.

Strychnine (alkaloid)gr. $1\frac{1}{4}$

Valerianic acidsufficient

Quinine valerianategr. 64

Elixir of ammonium valerianate, N. F., to make.....fl.oz. 16

Dissolve the strychnine in 2 fluidrams of the elixir of ammonium valerianate by the aid of a slight excess of valerianic acid. Triturate the quinine salt with this solution and add the remainder of the elixir of ammonium valerianate, agitate occasionally until dissolved, then filter.

In case the valerianic acid is in such excess that its odor is perceptible, the liquid must be cautiously neutralized by stirring it with a glass rod which is repeatedly moistened with very dilute ammonia water. Any excess of the latter must be avoided, as otherwise alkaloidal strychnine will be precipitated.

Each fluidram contains 1/100 gr. of strychnine valerianate, $\frac{1}{2}$ gr. of quinine

valerianate and 2 gr. of ammonium valerianate.

Elixir of Ammonium Valerianate with Sumbul. (Elixir of Ammonium Valerianate with Musk Root.)

Fluid extract of sumbul....fl.oz. 2

Elixir of ammonium valerianatefl.oz. 14

Mix, let stand for several hours and filter through purified talcum.

Each fluidram contains nearly 2 gr. of ammonium valerianate and represents $7\frac{1}{2}$ gr. of sumbul root.

See also No. II under Elixir of Sumbul, Compound.

Elixir of Ammonium Valerianate with Strychnine.

Strychnine sulfate.....gr. $1\frac{1}{4}$

Distilled waterfl.dr. 2

Elixir of ammonium valerianatefl.oz. 16

Dissolve the strychnine sulfate in the water by the aid of heat, add the elixir, and filter.

The elixir of ammonium valerianate must not be alkaline.

Each fluidram contains 2 gr. of ammonium valerianate and 1/100 gr. of strychnine sulfate.

Elixir of Anise. (Aniseed Cordial.)

Anetholm. 25

Oil of fennel.m. 5 (about, drops 8)

Spirit of bitter almond....fl.dr. $1\frac{1}{2}$

Distilled waterfl.oz. 2

Alcoholfl.oz. 4

Simple syrupfl.oz. 10

Purified talcdr. 2

Mix the anethol, oil and spirit with the alcohol, add the syrup and water, and set the mixture aside for 12 hours. Then mix it intimately with the talc and filter it through a wetted filter, returning the first portions of the filtrate until it runs through clear.—N. F.

This elixir is liable to become cloudy, from separation of essential oils, when it is exposed to a temperature lower than that at which it has been filtered. In general, it is recommended that it be cooled to, and filtered at, a temperature of about 15 deg. C. In the northern sections of this country, or in winter

time, it should be cooled to a proportionately lower temperature, previous to filtration.

Anethol is the stearopten of oil of anise, and possesses a finer and purer aroma and taste than any commercial variety of oil of anise. If it cannot be readily obtained, the so-called Saxon oil of anise may be substituted for it. The Russian oil of anise may be used but is not so good as the Saxon. Oil of star-anise, which is usually supplied by wholesalers when "oil of anise" is ordered, does not answer well for this purpose. The oil of fennel should be from the seed (the so-called "sweet" oil), not that from the chaff.

Elixir, Anti-Asthmatic, Hare's.

Sodium iodid	gr. 256
Sodium bromid	gr. 256
Tincture of lobelia.....	f.l.dr. 4¼
Fluid extract of euphorbia pilulifera	f.l.dr. 6½
Spirit of nitroglycerin.....	f.l.dr. 1
Distilled water	f.l.dr. 2
Simple elixir, to make.....	f.l.oz. 16

Dissolve the sodium salts in the water, mix the tincture, fluid extract and spirit with 10 fluidounces of elixir, add the solution, and the remainder of the elixir.

Each fluidram contains 2 gr. each of sodium iodid and bromid, 2 m. of tincture of lobelia, 3 m. of fluid extract of euphorbia pilulifera and 1/25 m. of nitroglycerin.

Elixir of Arbor Vitæ. (Elixir of Thuja Occidentalis.)

Fluid extract of arbor vitæ..	f.l.dr. 10½
Simple elixir, to make.....	f.l.oz. 16

Mix, allow to stand for several hours and filter.

Each fluidram represents 5 gr. of arbor vitæ.

Elixir, Aromatic.

Compound spirit of orange..	f.l.dr. 6
Simple syrup.....	f.l.oz. 24
Talc, purified	av.oz. 2
Alcohol, deodorized; distilled water, each, to make.....	f.l.oz. 64

To the spirit add enough alcohol to make 16 fluidounces; to this add the syrup in several portions, agitating after each addition, and afterwards add, in

the same manner, 24 fluidounces of water. Mix the talcum with this liquid, agitate viogrously, and filter through a well-wetted filter, returning the first portions of the filtrate until a clear liquid is obtained. Lastly, wash the filter with a mixture of 1 volume of alcohol and 3 of water until the product measures 64 fluidounces.—U. S. P.

The liquid will filter clear more readily if the talc be added to the mixture of spirit and alcohol instead of adding it last.

Elixir of Arsenic. (Elixir of Potassium Arsenite.)

Fowler's solution	f.l.dr. 10½
Simple elixir, to make.....	f.l.oz. 16

Each fluidram contains 5 minims of Fowler's solution, which represents 1/20 gr. of arsenous acid.

Elixir of Arsenic and Iron Chlorid.

See Elixir of Chlorids of Arsenic and Iron.

Elixir of Arsenic, Iron and Mercury Chlorids.

See Elixir of Chlorids of Arsenic, Iron and Mercury.

Elixir of Arsenic, Iron and Quinine.

See Elixir of Iron, Quinine and Arsenic.

Elixir of Arsenic and Mercury Iodids.

Donovan's solution	f.l.dr. 10½
Simple elixir, to make.....	f.l.oz. 16

Each fluidram contains 1/20 gr. each of red mercuric iodid and arsenic iodid.

Elixir of Arsenic and Quinine.

Solution of arsenous acid..	f.l.dr. 10½
Quinine sulfate.....	gr. 128
Simple elixir, to make.....	f.l.oz. 16

Dissolve by agitation and filter if necessary.

Each fluidram contains 1/20 gr. of arsenous acid, and 2 gr. of quinine sulfate.

Elixir of Arsenic and Strychnine.

Solution of arsenous acid..	f.l.dr. 10½
Strychnine sulfate.....	gr. 1¼
Simple elixir, to make.....	f.l.oz. 16

Dissolve by agitation and filter.
Each fluidram contains 1/20 gr. of arsenous acid and 1/100 gr. of strychnine sulfate.

Elixir of Beef.

Extract of beef.....gr. 256
 Distilled waterfl.oz. 1
 Simple elixir, to make.....fl.oz. 16

Dissolve the extract in the water, add the elixir, let stand for several days if possible, and filter.

Each fluidram contains 2 gr. of extract of beef.

The extract of beef suitable for this and similar preparations is that which is prepared by Liebig's method.

Elixir of Beef, Bismuth, Cinchona and Iron.

Extract of beef.....gr. 256
 Distilled waterfl.oz. 1
 Elixir of bismuth, cinchona and iron, to make.....fl.oz. 16

Dissolve the extract in the water, add the elixir, let stand for several days if possible, and filter.

Each fluidram contains 2 gr. of extract of beef, 1 gr. of bismuth salt, nearly 2 gr. of iron, and represents about $1\frac{1}{4}$ gr. of calisaya.

Elixir of Beef and Cinchona.

Extract of beef.....gr. 256
 Distilled waterfl.oz. 1
 Detannated elixir of cinchona, N. F., to make.....fl.oz. 16

Dissolve the extract in the water, add the elixir, let stand for several days if possible, and filter.

Each fluidram contains 2 gr. of extract of beef and represents about $1\frac{1}{2}$ gr. of cinchona.

Elixir of Beef, Cinchona and Iron.

Extract of beef.....gr. 256
 Distilled waterfl.oz. 1
 Elixir of cinchona and iron, N. F., to make.....fl.oz. 16

Dissolve the extract in the water, add the elixir, allow to stand for several days if possible, and filter.

Each fluidram contains 2 gr. of extract of beef and nearly 2 gr. of iron phosphate and represents about $1\frac{1}{2}$ gr. of cinchona.

Elixir of Beef, Cinchona, Iron and Strychnine.

Strychnine sulfategr. $1\frac{1}{4}$
 Distilled waterfl.oz. $\frac{1}{2}$
 Elixir of beef, iron and cinchona, to make.....fl.oz. 16

Dissolve the alkaloidal salt in the water by the aid of heat, add to the elixir, and filter.

Each fluidram contains nearly 2 gr. each of extract of beef and iron phosphate, 1/100 gr. of strychnine sulfate, and represents about $1\frac{1}{4}$ gr. of cinchona.

Elixir of Beef, Coca and Iron.

Iron phosphate, soluble.....gr. 256
 Extract of beef.....gr. 256
 Distilled water, hot.....fl.oz. 2
 Elixir of coca, to make....fl.oz. 16

Dissolve the iron salt and extract each in 1 fluidounce of water, mix with the elixir, allow to stand for several days, and filter.

Each fluidram contains 2 gr. each of iron phosphate and extract of beef and represents about 7 gr. of coca.

Elixir of Beef and Iron.

Citrate of iron and ammoniumgr. 128
 Distilled water, warm....fl.oz. 1
 Elixir of beef, to make....fl.oz. 16

Dissolve the iron salt in the water and add the elixir.

Each fluidram contains 1 gr. of iron salt and about $1\frac{3}{4}$ gr. of extract of beef.

Elixir of Beef, Iron and Malt.

Extract of beef.....gr. 256
 Extract of malt (thick)...av.oz. 4
 Citrate of iron and ammoniumgr. 128
 Spirit of orangefl.dr. 1
 Alcoholfl.oz. 2
 Sherry winefl.oz. 9

Water,
 Ferric hydrate, each.....sufficient

Dissolve the extract of beef in one fluidounce of hot water, and add the alcohol containing the spirit of orange, then the wine with which the malt extract has previously been mixed; shake frequently during 2 or 3 days, filter, and wash the filter with a mixture of alcohol and water in the proportion of 1 of the former to 4 of the latter by measure, so as to obtain a filtrate of 15 fluidounces. Dissolve the iron salt in 6 fluidrams of water, add to the filtrate, and then add enough water to make 16 fluidounces.

The ferric hydrate may be prepared as described under elixir of gentian; the amount to be used must be sufficient to detannate the mixture, and if an insufficient amount has been used, more must be added, allowing to stand for several days more. The test to be applied is the usual one—filtering a small amount of liquid and testing the filtrate with solution of iron chlorid to note if any blackish discoloration occur.

Each fluidram contains 2 gr. of extract of beef, 1 gr. of soluble iron citrate and 15 gr. of malt extract.

Elixir of Berberine.

Berberine phosphate.....gr. 32
Distilled water, hot.....fl.oz. 1
Simple elixirfl.oz. 15

Dissolve the berberine in the water and add the elixir.

Each fluidram contains $\frac{1}{4}$ gr. of berberine phosphate.

Elixir of Berberine and Iron.

Iron pyrophosphate, soluble..gr. 128
Distilled water, hot.....fl.oz. 1
Elixir of berberine, to make fl.oz. 16

Dissolve the iron salt in the water, add the elixir, and filter if necessary.

Each fluidram contains 1 gr. of iron pyrophosphate and nearly $\frac{1}{4}$ gr. of berberine phosphate.

Elixir of Bismuth.

Glycerite of bismuth.....fl.oz. 2
Glycerinfl.oz. 2
Distilled waterfl.oz. 4
Aromatic elixir.....fl.oz. 8

Mix in the order given and filter if necessary.

Each fluidram contains 2 gr. of bismuth and sodium tartrate.—N. F.

In the former N. F., this preparation was made by dissolving 256 grains of citrate of bismuth and ammonium in 1 fluidounce of hot water by the aid of a few drops of ammonia water, then adding enough aromatic elixir to make 16 fluidounces.

Elixir of Bismuth, Beef, Cinchona and Iron.

See Elixir of Beef, Bismuth, Cinchona and Iron.

Elixir of Bismuth and Cinchona.

Bismuth and ammonium citrategr. 128
Distilled water, hot.....fl.dr. 4
Ammonia watersufficient
Detannated elixir of cinchona, N. F., to make.....fl.oz. 16

Mix the bismuth salt with the hot water, allow the solution to stand to permit any undissolved matter to subside; decant the clear liquid and add to the residue just enough ammonia water to dissolve. Mix this solution with the decanted liquid, and if alkaline, neutralize the mixture with dilute solution of citric acid gradually added. To the whole add the elixir of cinchona, let stand 24 hours, and filter if necessary.

Or instead of the above method of preparation, mix 1 fluidounce of glycerite of bismuth with 15 of the cinchona elixir.

Each fluidram contains 1 gr. of bismuth salt and represents $1\frac{1}{2}$ gr. of calisaya.

Elixir of Bismuth, Cinchona and Iron.

Glycerite of bismuth.....fl.oz. 1
Distilled waterfl.oz. 1
Elixir of cinchona and iron.fl.oz. 14

Dilute the glycerite with the water, add the elixir, mix thoroughly, and filter if necessary.—N. F.

Each fluidram contains 1 gr. of bismuth salt and nearly 2 gr. of iron phosphate.

Elixir of Bismuth, Cinchona, Iron and Pepsin.

Glycerite of bismuth.....fl.oz. 1
Detannated tinct. cinchona.fl.oz. $2\frac{1}{2}$
Iron pyrophosphate, soluble..gr. 256
Pepsin, scalegr. 128
Distilled waterfl.oz. 2
Simple syrupfl.oz. 4
Simple elixir, to make...fl.oz. 16

Dissolve the pepsin in 6 fluidounces of simple elixir and the iron salt in the water, then mix all the ingredients, allow to stand for 24 hours and filter if necessary.

Each fluidram represents 1 gr. each of bismuth salt and pepsin, nearly 2 gr. of cinchona and 2 gr. of iron pyrophosphate.

Elixir of Bismuth, Cinchona, Iron, Pepsin and Strychnine.

Strychnine sulfategr. 1¼
 Distilled water, hot.....f.dr. 4
 Elixir of bismuth, cinchona,
 iron and pepsin.....f.oz. 15½

Dissolve the strychnine sulfate in the water, add the elixir, and filter.

Elixir of Bismuth, Cinchona, Iron and Strychnine.

Strychnine sulfategr. 1¼
 Water, hotf.dr. 1¼
 Elixir of bismuth, cinchona,
 and iron, to make.....f.oz. 16

Dissolve the strychnine sulfate in the hot water, add the elixir of cinchona, iron and bismuth, and filter, if necessary.—N. F.

Elixir of Bismuth, Cinchona and Pepsin.

Detannated tinc. cinchona..f.oz. 2½
 Glycrite of bismuth.....f.oz. 1
 Pepsin, scalegr. 128
 Distilled waterf.oz. 2
 Simple syrupf.oz. 4
 Simple elixir, to make....f.oz. 16

Dissolve the pepsin in the water by agitation, add all the other ingredients, shake thoroughly, allow to stand for 24 hours, and filter if necessary.

Each fluidram represents nearly 2 gr. of cinchona and contains 1 gr. each of pepsin and bismuth salt.

Elixir Bismuth and Iron.

Iron pyrophosphate, soluble..gr. 128
 Distilled water, hot.....f.dr. 4
 Elixir of bismuth.....f.oz. 8
 Simple elixir, to make....f.oz. 16

Dissolve the iron salt in water and add the elixirs.

Each fluidram contains 1 gr. each of iron pyrophosphate and bismuth salt.

Elixir Bismuth, Iron and Pepsin.

Glycerite of bismuth.....f.oz. 1
 Iron pyrophosphategr. 128
 Pepsin, scalegr. 128
 Distilled waterf.oz. 3
 Simple elixir, to make....f.oz. 16

Dissolve the iron salt and pepsin each separately in half the water, mix, add all the other ingredients, shake thoroughly, allow to stand for 24 hours, and filter if necessary.

Each fluidram contains 1 gr. each of

iron pyrophosphate, pepsin and bismuth salt.

Elixir of Bismuth, Iron, Pepsin and Quinine.

Quinine hydrochloridgr. 32
 Elixir of bismuth, iron and
 pepsinf.oz. 16

Mix, dissolve by agitation, and filter, if necessary.

Each fluidram contains 1 gr. each of pepsin, iron pyrophosphate and bismuth salt and ¼ gr. of quinine hydrochlorid.

Elixir Bismuth, Iron and Quinine.

Iron pyrophosphategr. 128
 Quinine hydrochloridgr. 64
 Glycrite of bismuth.....f.oz. 1
 Distilled waterf.oz. 2
 Simple elixir, to make....f.oz. 16

Dissolve the iron and quinine each in 1 fluidounce of water, mix, add the other ingredients, and filter if necessary.

Each fluidram contains 1 gr. of iron pyrophosphate, ½ gr. of quinine hydrochlorid, and 1 gr. of bismuth salt.

Elixir of Bismuth, Iron and Strychnine.

Iron pyrophosphate, soluble..gr. 128
 Strychnine sulfategr. 1¼
 Distilled waterf.oz. 1
 Elixir of bismuth.....f.oz. 8
 Simple elixir, to make....f.oz. 16

Dissolve the iron salt and strychnine salt separately in 4 fluidrams of the water; add the two elixirs, and filter if necessary. The elixir of bismuth must be perfectly neutral.

Each fluidram contains 1/100 gr. of strychnine sulfate and 1 gr. each of iron pyrophosphate and bismuth salt.

Elixir of Bismuth, Nux Vomica and Pepsin.

Tincture of nux vomica....f.dr. 5½
 Elixir of pepsin and bismuth,
 to makef.oz. 16

Each fluidram contains nearly 1 gr. of pepsin and 2 gr. of bismuth salt and represents about ½ gr. of nux vomica.

Elixir of Bismuth and Pancreatin.

Glycerite of bismuth.....f.oz. 1
 Pancreatin, puregr. 128
 Distilled waterf.oz. 1
 Simple elixir, to make....f.oz. 16

Mix the pancreatin with the water, agitate occasionally until apparently dis-

solved, add the other ingredients, mix well, and filter.

Each fluidram contains 1 gr. each of pancreatin and bismuth salt.

Elixir of Bismuth, Pancreatin and Pepsin.

See Elixir of Pancreatin and its combinations.

Elixir Bismuth and Pepsin.

Pepsin, scale (1:3000).....	gr. 64
Glycerin	fl.oz. 2
Glycerite of bismuth.....	fl.oz. 2
Distilled water	fl.oz. 4
Aromatic elixir	fl.oz. 8

Dissolve the pepsin, the mixed glycerin and distilled water by agitation, then add the glycerite of bismuth and elixir.—N. F.

If thought desirable, this elixir may be colored by the addition of 40 minims of caramel.

Each fluidram contains $\frac{1}{2}$ gr. of pepsin and 2 gr. of bismuth and sodium tartrate.

Elixir of Bismuth, Pepsin and Quinine.

Quinine hydrochlorid	gr. 32
Elixir of pepsin and bismuth	fl.oz. 16

Mix and dissolve by agitation.

Each fluidram contains $\frac{1}{4}$ gr. of quinine hydrochlorid, $\frac{1}{2}$ gr. of pepsin, and 2 gr. of bismuth salt.

Elixir Bismuth, Pepsin and Strychnine.

Strychnine (alkaloid)	gr. $1\frac{1}{4}$
Tartaric acid	gr. $1\frac{1}{4}$
Elixir of bismuth and pepsin	fl.oz. 16

Triturate the strychnine and acid with 4 fluidrams of the elixir until dissolved, then add the remainder of the elixir, and filter if necessary.

Each fluidram contains about 1/100 gr. of strychnine, $\frac{1}{2}$ gr. of pepsin, and 2 gr. of bismuth and sodium tartrate.—N. F.

Elixir of Bismuth, Pepsin and Wafer Ash.

Fluid extract of wafer ash.....	fl.oz. 2
Elixir of pepsin and bismuth	fl.oz. 14

Mix, allow to stand 24 hours, and filter through purified talcum.

Each fluidram represents $7\frac{1}{2}$ gr. of wafer ash, nearly 1 gr. of pepsin and nearly 2 gr. of bismuth salt.

Elixir of Bismuth and Quinine.

Quinine hydrochlorid	gr. 32
Elixir of bismuth, to make.....	fl.oz. 16

Dissolve the quinine salt in the elixir (which should be neutral) by agitation and filter, if necessary.

Each fluidram contains 1 gr. of quinine hydrochlorid and 2 gr. of bismuth salt.

Elixir of Bismuth and Strychnine.

Strychnine sulfate	gr. $1\frac{1}{4}$
Distilled water, hot.....	fl.dr. 4
Elixir of bismuth.....	fl.oz. $15\frac{1}{2}$

Dissolve the alkaloidal salt in the water and add to the elixir, which latter should be neutral.

Each fluidram contains 1/100 gr. of strychnine sulfate and nearly 2 gr. of bismuth salt.

Elixir, Bitter. (Elixir Amarum.)

Extract of wormwood.....	av.oz. $3\frac{1}{4}$
Oleosaccharate of pepper-mint	av.oz. $13\frac{1}{4}$
Aromatic tincture	fl.oz. $13\frac{1}{4}$
Bitter tincture	fl.oz. $13\frac{1}{4}$
Water	fl.oz. $8\frac{1}{2}$

Triturate the extract and oleosaccharate with the water to a smooth condition and add the other ingredients. Allow the mixture to stand for a short time, then decant the liquid from the sediment.—Germ. Pharm.

This preparation should be cloudy and of a dark brown color.

Elixir of Blackberry. (Elixir of Rubus.)

I.

Fluid extract of blackberry root	fl.oz. 2
Tincture of vanilla.....	fl.dr. 4
Compound elixir of taraxacum	fl.oz. 4
Simple elixir, to make.....	fl.oz. 16

Each fluidram represents $7\frac{1}{2}$ gr. of blackberry root bark.

II.

Fluid extract of blackberry root	fl.oz. 2
Oil of clove.....	m. 10
Oil of cassia.....	m. 10
Tincture of ginger.....	fl.dr. 4
Simple elixir, to make.....	fl.oz. 16

Elixir of Blackberry, Compound.
(Aromatic Elixir of Blackberry.)

Blackberry root	gr. 480
Galls	gr. 480
Cinnamon, Saigon	gr. 480
Clove	gr. 120
Mace	gr. 60
Ginger	gr. 60
Blackberry juice, fresh....	fl.oz. 24
Simple syrup	fl.oz. 12
Glycerin	fl.oz. 12
Diluted alcohol	sufficient

Reduce the solids to a moderately coarse powder, moisten it with diluted alcohol, and percolate it with this menstruum in the usual manner, until 16 fluidounces of percolate are obtained. To this add the blackberry juice, syrup and glycerin, and mix thoroughly.—N. F.

Elixir of Black Cohosh. (Elixir of Cimicifuga.)

Fluid extract of black cohosh	fl.oz. 4
Alcohol	fl.oz. 1
Simple elixir	fl.oz. 11

Mix, let stand 24 hours, and filter through purified talcum.

Each fluidram represents $7\frac{1}{2}$ gr. of black cohosh.

Elixir of Black Cohosh, Compound.
(Compound Elixir of Cimicifuga.)

Fluid extract of black cohosh	fl.dr. $9\frac{1}{2}$
Fluid extract of wild cherry.....	fl.dr. 8
Fluid extract of bloodroot.....	fl.dr. $3\frac{1}{4}$
Fluid extract of licorice.....	fl.dr. $3\frac{1}{4}$
Simple elixir.....	fl.oz. 13

Mix, allow to stand for 24 hours, and filter through purified talcum.

Each fluidram represents about $4\frac{1}{2}$ gr. of black cohosh, 4 gr. of wild cherry, and $1\frac{1}{2}$ gr. each of bloodroot and licorice.

Elixir of Black Haw. (Elixir of Viburnum Prunifolium.)

Fluid extract of black haw.....	fl.oz. 2
Compound tincture of cardamom	fl.dr. 10
Aromatic elixir, to make....	fl.oz. 16

Mix, allow the mixture to stand a few days, if convenient, and filter.

Each fluidram represents $7\frac{1}{2}$ gr. of black haw.—N. F.

Elixir of Black Haw, Compound.
(Compound Elixir of Viburnum Prunifolium.)

Fluid extract of black haw.....	fl.oz. 2
Fluid extract of hydrastis.....	fl.oz. 2
Fluid extract of Jamaica dogwood	fl.oz. 1
Simple elixir.....	fl.oz. 11

Mix, allow to stand for 24 hours, and filter.

Each fluidram represents $7\frac{1}{2}$ gr. each of black haw and golden seal and nearly 4 gr. of Jamaica dogwood.

This is listed in manufacturers' catalogues under the names "Sedative Cordial" and "Sedative Elixir."

Elixir of Blue Flag.

Fluid extract of blue flag....	fl.oz. 4
Alcohol	fl.oz. 1
Simple elixir.....	fl.oz. 11

Mix, allow to stand for 24 hours, and filter.

Each fluidram represents 15 gr. of blue flag.

Elixir of Blue Flag and Wahoo.

Fluid extract of blue flag....	fl.oz. $2\frac{3}{4}$
Fluid extract of wahoo.....	fl.oz. $2\frac{3}{4}$
Alcohol	fl.oz. $\frac{1}{2}$
Simple elixir.....	fl.oz. 10

Mix, allow to stand for 24 hours and filter through talcum.

Each fluidram represents about 10 gr. each of blue flag and wahoo.

Elixir of Bromid of Ammonium.

See Elixir of Ammonium Bromid.

Elixir of Bromid of Caffeine.

See Elixir of Caffeine.

Elixir of Bromid of Calcium.

See Elixir of Calcium Bromid.

Elixir of Bromid of Lithium.

See Elixir of Lithium Bromid.

Elixir of Bromid of Potassium.

Potassium bromid.....	gr. 1280
Aromatic elixir, to make....	fl.oz. 16

Dissolve the potassium bromid in the elixir, by agitation, and filter.

Each fluidram contains 10 gr. of potassium bromid.—N. F.

Elixir of Six Bromids.

Potassium bromid.....gr.	640
Sodium bromid.....gr.	640
Ammonium bromid.....gr.	384
Calcium bromid.....gr.	192
Lithium bromid.....gr.	64
Iron bromid.....gr.	64

Compound tincture of cud-
bearfl.dr. 2

Simple elixir, to make....fl.oz. 16

Dissolve by agitation and filter, if necessary.

Each fluidram contains 5 gr. each of potassium and sodium bromids, 3 gr. of ammonium bromid, $1\frac{1}{2}$ gr. of calcium bromid, and 1 gr. each of lithium and iron bromids.

Elixir of Bromid of Sodium.

Sodium bromid.....gr.	1280
Aromatic elixir, to make..fl.oz.	16

Dissolve the sodium bromid in the elixir, by agitation, and filter, if necessary.

Each fluidram contains 10 gr. of sodium bromid.—N. F.

Elixir of Bromid of Sodium and Lupulin.

See Elixir of Lupulin and Sodium Bromid.

Elixir of Three (or Triple) Bromids.

Potassium bromid.....gr.	128
Sodium bromid.....gr.	128
Elixir of caffeine, to make..fl.oz.	16

Mix, dissolve by agitation, and filter, if necessary.

Each fluidram contains 1 gr. of each of the bromids of potassium, sodium and caffeine.

Elixir of Bromid of Zinc.

Zinc bromid.....gr.	128
Simple elixir.....fl.oz.	16

Dissolve by agitation and filter, if necessary.

Each fluidram contains 1 gr. of zinc bromid.

Elixir of Buchu.

Fluid extract of buchu....fl.oz.	2
Alcoholfl.oz.	1
Simple syrup.....fl.oz.	1
Purified talc.....gr.	120
Aromatic elixir.....fl.oz.	12

Mix the fluid extract of buchu with the alcohol, add the other ingredients, shake well, and if time permits occa-

sionally during 12 hours, then filter, returning the first portions of filtrate until the liquid passes through clear.

Each fluidram represents about $7\frac{1}{2}$ gr. of buchu.—N. F.

Elixir of Buchu, Compound.

Compound fl. ext. of buchu..fl.oz.	4
Alcoholfl.oz.	1
Simple syrup.....fl.oz.	1
Purified talc.....gr.	120
Aromatic elixir.....fl.oz.	10
Prepare like elixir of buchu.	

Each fluidram represents 10 gr. of buchu, and 2 gr. each of cubeb, juniper and uva ursi.—N. F.

Elixir of Buchu and Juniper, Compound. (Rheumatic Elixir.)

Fluid extract of buchu....fl.dr.	$6\frac{1}{2}$
Fluid extract of barberry barkfl.dr.	$3\frac{1}{4}$
Fluid extract of juniper berriesfl.dr.	$3\frac{1}{4}$
Sodium salicylate.....gr.	160
Simple syrup.....fl.oz.	1
Alcoholfl.oz.	1
Simple elixir, to make....fl.oz.	16

Mix all, let stand for 24 hours, and filter through purified talcum.

Each fluidram contains $1\frac{1}{4}$ gr. of sodium salicylate, and represents 3 gr. of buchu, and $1\frac{1}{2}$ gr. each of barberry bark and juniper berries.

Elixir of Buchu, Juniper and Potassium Acetate.

Fluid extract of buchu....fl.dr.	12
Fluid extract of juniper berriesfl.dr.	4
Potassium acetate.....gr.	192
Alcoholfl.oz.	1
Simple syrup.....fl.oz.	1
Simple elixir.....fl.oz.	12

Mix, allow to stand for 24 hours and filter through talcum.

Each fluidram contains $1\frac{1}{2}$ gr. of potassium acetate, and represents about $5\frac{1}{2}$ gr. of buchu, and 2 gr. of juniper berries.

Elixir of Buchu, Juniper, Uva Ursi and Potassium Acetate.

Fluid extract of buchu....fl.oz.	2
Fluid extract of uva ursi...fl.dr.	11
Fluid extract of juniper berriesfl.dr.	$5\frac{1}{2}$
Potassium acetate.....av.oz.	$1\frac{1}{2}$
Alcoholfl.oz.	1
Simple syrup.....fl.oz.	1
Simple elixir, to make.....fl.oz.	16

Mix, allow to stand for 24 hours, and filter through purified talcum.

Each fluidram contains about 5 gr. of potassium acetate, and represents $7\frac{1}{2}$ gr. of buchu, 5 gr. of uva ursi, and $2\frac{1}{2}$ of juniper berries.

See also Elixir, Diuretic.

Elixir of Buchu and Pareira.

Fluid extract of buchu.....fl.oz. 2

Fluid extract of pareira

bravafl.oz. 2

Alcoholfl.oz. 1

Simple syrup.....fl.oz. 1

Simple elixir.....fl.oz. 10

Mix, allow to stand for 24 hours, and filter through purified talcum.

Each fluidram represents $7\frac{1}{2}$ gr. each of buchu and pareira brava.

Elixir of Buchu and Pareira, Compound.

Fluid extract of buchu.....fl.dr 8

Fluid extract of juniper

berriesfl.dr. 4

Fluid extract of pareira

bravafl.dr. 2

Fluid extract of stoneroot..fl.dr. 2

Alcoholfl.oz. 1

Simple syrup.....fl.oz. 1

Simple elixir.....fl.oz. 12

Mix, allow to stand for 24 hours, and filter through purified talcum.

Each fluidram represents about 4 gr. of buchu, 2 gr. of juniper berries, and 1 gr. each of pareira brava and collinsonia.

Elixir of Buchu and Potassium Acetate.

Potassium acetate.....gr. 640

Elixir of buchu, to make...fl.oz. 16

Dissolve the potassium acetate in the elixir and filter, if necessary.

Each fluidram represents 5 gr. of potassium acetate, and about $7\frac{1}{2}$ gr. of buchu.—N. F.

Elixir of Buckthorn. (Elixir of Frangula.)

Fluid extract of buckthorn..fl.oz. 4

Alcoholfl.oz. 1

Compound elixir of taraxa-

cumfl.oz. 4

Aromatic elixir.....fl.oz. 7

Mix them, allow the mixture to stand 48 hours, if convenient, and filter.

Each fluidram represents 15 gr. of buckthorn.—N. F.

Elixir of Butyl Chloral Hydrate.

See Elixir of Croton Chloral Hydrate and its combinations.

Elixir of Caffeine.

Caffeinegr. 128

Diluted hydrobromic acid....m. 30

Syrup of coffee.....fl.oz. 4

Aromatic elixir, to make..fl.oz. 16

Rub the caffeine in a mortar, with the acid and about 2 fluidounces of aromatic elixir, until solution is effected; then add the syrup, and lastly the remainder of the aromatic elixir. Filter, if necessary.

Each fluidram contains 1 gr. of caffeine.—N. F.

Elixir of Calcium Bromid.

Calcium bromid.....gr. 640

Diluted hydrobromic acid....m. 30

Aromatic elixir, to make...fl.oz. 16

Dissolve the calcium bromid in 8 fluidounces of aromatic elixir by agitation, then add the remainder of the aromatic elixir and the acid.—N. F.

Each fluidram contains 5 gr. of calcium bromid.

Elixir of Calcium Hypophosphites.

Calcium hypophosphite.....gr. 256

Hypophosphorous acid, 30%.m. 30

Aromatic elixir, to make...fl.oz. 16

Dissolve the calcium hypophosphite in 12 fluidounces of aromatic elixir, add the acid and the remainder of the aromatic elixir and filter.

Each fluidram contains 2 gr. of calcium hypophosphite.—N. F.

Elixir of Calcium Iodid.

I.

Calcium iodid.....av.oz. $1\frac{1}{2}$

Simple elixir, to make.....fl.oz. 16

Dissolve by agitation, and filter.

II. Inasmuch as calcium iodid is an unstable compound, it should be prepared as needed, and the following formula should therefore receive preference:

Solution of iron iodid, prepared without hypophosphorous acid.....fl.dr. $13\frac{1}{2}$

Calcium oxid, C. P.....av.oz.	2
Distilled water.....sufficient.	
Sugar	av.oz. 3½
Compound spirit of orange..f.dr.	2
Alcohol	f.oz. 4

Hydrate the calcium oxid with 6 fluid-ounces of water, add the solution of iron iodid, heat to boiling, allow to stand a few minutes, decant the clear liquid, add to the residue a fresh portion of distilled water, heat again to boiling, decant as before, and repeat the process again until the mixed decantes measure 10 fluidounces; add the alcohol containing the spirit, let stand for an hour or more, filter, in the filtrate dissolve the sugar by agitation, and strain if necessary.

Each fluidram contains 5 gr. of calcium iodid.

Elixir of Calcium Lactophosphate.

Calcium lactate.....gr.	128
Phosphoric acid (85%)...f.dr.	1
Water	f.oz. 1
Simple syrup.....f.oz.	1
Aromatic elixir, to make...f.oz.	16

Triturate the calcium lactate with the phosphoric acid, water and syrup, until the salt is dissolved, then add the aromatic elixir, and filter.

Each fluidram represents 1 gr. of calcium lactate, or about 1½ gr. of so-called calcium lactophosphate.—N. F.

Elixir of Calcium Lactophosphate, Cinchona and Iron.

Calcium lactate.....gr.	64
Phosphoric acid (85%).....m.	30
Ammonia water (10%)...f.dr.	4
Citric acid.....gr.	120
Elixir of cinchona and iron, to make.....f.oz.	16

Dissolve the calcium lactate in 7 fluid-ounces of elixir of cinchona and iron, with the aid of the phosphoric acid; then add the citric acid, and when this is dissolved, the ammonia water; finally, add the remainder of the elixir of cinchona and iron, and filter.

Each fluidram contains ½ gr. of calcium lactate (or about ¾ gr. of so-called calcium lactophosphate), and nearly 2 gr. of iron phosphate.

See also Elixir of Quinine and Phosphates, Compound.—N. F.

Elixir of Calcium Phosphate.

Calcium phosphate.....gr.	640
Hydrochloric acid, U. S. P..f.dr.	5
Water	f.oz. 1
Tincture of cudbear.....f.dr.	2
Simple elixir, to make.....f.oz.	16

Mix the calcium phosphate with the water, add the acid, dissolve, add the elixir, and then the tincture.

Each fluidram contains 5 gr. of calcium phosphate.

Elixir of Calcium and Sodium Hypophosphites with Cinchona.

See Elixir of Cinchona and Hypophosphites.

Elixir of Calcium and Sodium Hypophosphites with Malt.

Calcium hypophosphite.....gr.	128
Sodium hypophosphite.....gr.	128
Distilled water.....f.oz.	2
Adjuvant elixir.....f.oz.	6
Fluid extract of malt....f.oz.	8

Dissolve the salts in the elixir by trituration, filter, and add the malt extract.

Each fluidram contains 1 gr. each of the hypophosphites of calcium and sodium.

Elixir of Calcium and Sodium Hypophosphites with Tar.

Calcium hypophosphite.....gr.	128
Sodium hypophosphite.....gr.	128
Distilled water.....f.oz.	2
Elixir of tar, to make.....f.oz.	16

Dissolve the salts in the water, add the elixir, and filter.

Each fluidram contains 1 gr. of each of the hypophosphites.

Elixirs of Calisaya.

Elixir of calisaya, and its various combinations, will be referred to under the head of Elixir of Cinchona.

Elixir of Cascara Sagrada.

I.

Aromatic fl. ext. cascara sagrada	f.oz. 8
Aromatic elixir.....f.oz.	8

Mix them, allow the mixture to stand a few days, if convenient, and filter.

Each fluidram represents 30 gr. of cascara sagrada.

N. F.

II.

Tincture of orange, Brit.
Pharm.f℥.oz. 1½
Alcoholf℥.dr. 6
Cinnamon water.....f℥.oz. 2¼
Simple syrup.....f℥.oz. 4½
Fluid extract of cascara
sagrada, Brit. Pharm.....f℥.oz. 6
Brit. Form.

Elixir of Cascara Sagrada, Compound. (Laxative Elixir.—Elixir Purgans.)

Aromatic fl. ext. cascara
sagradaf℥.oz. 4
Fluid extract of senna.....f℥.dr. 10
Fluid extract of butternut...f℥.oz. 1
Aromatic elixir.....f℥.oz. 11¾

Mix them, allow to stand a few days,
if convenient, and filter.—N. F.

See also Elixir, Cathartic, Compound,
Nos. I and II.

Elixir, Castillon's.

Cinchona, coarse powder...gr. 160
Gentian, coarse powder....gr. 160
Ipecac, coarse powder.....gr. 80
Columbo, coarse powder...gr. 80
Cinnamon, coarse powder...gr. 20
Aqueous extract of opium...gr. 20
Diluted alcohol, to make...f℥.oz. 16

Mix the drugs, and extract by per-
colation or other suitable process.

Elixir, Cathartic, Compound.

Fluid extract of buckthorn.f℥.oz. 4
Fluid extract of senna.....f℥.oz. 3
Fluid extract of rhubarb...f℥.oz. 2
Spirit of peppermint.....f℥.dr. 3½
Solution of potassa.....f℥.dr. 1
Saccharingr. 60
Aromatic elixir, to make...f℥.oz. 32

Dissolve the saccharin in about 20
fluidounces of aromatic elixir previously
mixed with the solution of potassa, then
add the fluid extracts, the spirit and the
remainder of the elixir, mix well, allow
to stand for 24 hours, and filter.—N. F.

The dose as an aperient is 1 fluidram,
as a cathartic, 3 fluidrams.

Other cathartic elixirs mentioned in
this work are those containing senna,
rhubarb, cascara sagrada senna, and
aloin and elixir of long life.

The following are cathartic elixirs
containing cascara sagrada in which the
taste of the latter is well disguised:

I.

Fluid extract of cascara
sagrada, bitterless or aro-
maticf℥.oz. 3
Fluid extract of senna.....f℥.oz. 2
Fluid extract of wahoo.....f℥.oz. 1
Glycerite of licorice.....f℥.oz. 2
Saccharingr. 60
Aromatic elixir, to make...f℥.oz. 16
The bitter taste of the wahoo is well
concealed and the elixir is miscible with
water.

II.

Fluid extract of cascara
sagrada, bitterless or aro-
maticf℥.oz. 3
Fluid extract of rhubarb...f℥.oz. 1½
Fluid extract of senna.....f℥.oz. 1½
Glycerite of licorice.....f℥.oz. 2
Saccharingr. 60
Aromatic elixir, to make...f℥.oz. 16

**Elixir of Celery, Compound. (Elixir
Apii Graveolentis Compositum.)**

Fluid extract of celery seed.f℥.oz. 1
Fluid extract of coca.....f℥.oz. 1
Fluid extract of kola.....f℥.oz. 1
Fluid extract of black haw...f℥.oz. 1
Alcoholf℥.oz. 2
Aromatic elixir, to make...f℥.oz. 16

Mix the alcohol with 4 fluidounces of
aromatic elixir; to this add the fluid ex-
tract of celery in several portions, shak-
ing after each addition, and afterwards
the other fluid extracts; finally, add the
remainder of the elixir, allow the mix-
ture to stand 24 hours, and filter.

Each fluidram represents 7½ gr. each
of celery seed, coca, kola and black haw.
—N. F.

**Elixir of Celery and Guarana. (Com-
pound Elixir of Guarana.)**

Fluid extract of celery seed.f℥.oz. 2
Fluid extract of guarana...f℥.oz. 2
Aromatic elixir.....f℥.oz. 12

Mix, allow to stand for 24 hours, and
filter through talcum.

Each fluidram represents 7½ gr. each
of celery and guarana.

**Elixir of Cherries. (Elixir Ceraso-
rum.)**

Ripe, sour cherries, free
from stemsav.oz. 8
Alcoholf℥.oz. 2
Glycerinf℥.oz. 1
Simple syrupsufficient.

Crush the cherries and stones to a pulp, add the alcohol and glycerin, macerate for 7 days, press and filter, and to the filtrate add simple syrup enough to make 16 fluidounces.

This is used as a vehicle and adjuvant.

Elixir of Chirata.

Tincture of chirata.....fl.oz. 4
Simple elixir.....fl.oz. 12

Each fluidram represents $1\frac{1}{2}$ gr. of chirata.

Elixir of Chloral Hydrate. (Elixir of Chloral.)

Chloral hydrate, crystal.....gr. 640
Simple elixir, to make.....fl.oz. 16

Mix, dissolve by agitation, and filter, if necessary.

Each fluidram contains 5 gr. of chloral hydrate.

Elixir of Chloral Hydrate and Ammonium Valerianate.

See Elixir of Ammonium Valerianate and its combinations.

Elixir of Chloralamid.

Chloralamidgr. 480
Tincture of cudbear.....fl.dr. 2
Alcoholfl.oz. 2
Simple elixir, to make.....fl.oz. 16

Dissolve by agitation and filter if necessary.

Each tablespoonful contains 15 gr. of chloralamid.

Elixir of Chlorids of Arsenic and Iron. (Elixir of Two Chlorids.)

Solution of arsenous acid...fl.dr. $10\frac{1}{2}$
Tincture of citrochlorid of ironfl.dr. $5\frac{1}{4}$
Simple elixir.....fl.oz. 14

Each fluidram contains $1\frac{1}{20}$ gr. of arsenous acid (as so-called "chlorid of arsenic") and about $\frac{1}{4}$ gr. of iron chlorid.

Elixir of Chlorids of Arsenic, Iron and Mercury. (Elixir of Three Chlorids.)

Solution of protochlorid of ironm. 48
Mercuric chlorid.....gr. 1
Solution of arsenous acid.....m. 50
Compound elixir of quinine, to make.....fl.oz. 16

Mix, dissolve, and filter.

Each fluidram contains $\frac{1}{8}$ gr. of ferrous chlorid, $1\frac{1}{128}$ gr. of mercuric

chlorid and $1\frac{1}{256}$ gr. of arsenous acid (as so-called "chlorid of arsenic").

Elixir of Four Chlorids. (Four Chlorids.)

I. This is from Official Formulas of America Hospitals:

Mercuric chlorid.....gr. $\frac{3}{4}$
Solution of arsenous acid...fl.dr. 2
Tincture of ferric chlorid...fl.dr. 6
Diluted hydrochloric acid...fl.dr. 4
Syrup of ginger.....fl.dr. 12
Water, to make.....fl.oz. 6

Mix, dissolve and filter, if necessary.

Each fluidram contains about $1\frac{1}{40}$ gr. of arsenous acid (as so-called "chlorid of arsenic"), $1\frac{1}{64}$ gr. of mercuric chlorid, about $\frac{3}{4}$ gr. of ferric chlorid, and about 5 minims of diluted hydrochloric acid.

II. Formula of Dr. A. H. Smith:

Mercuric chlorid.....gr. 1 to 2
Solution of arsenous acid....fl.dr. 1
Tincture of iron chlorid....fl.dr. 4
Diluted hydrochloric acid...fl.dr. 4
Simple syrup.....fl.oz. 3
Water, to make.....fl.oz. 6

This is powerful alternative in chlorosis, anemic syphilitic cases, etc.

Elixir of Chloroform.

Chloroformm. 256
Simple elixir, to make.....fl.oz. 16

Mix the alcohol and chloroform, and add the elixir.

Each fluidram contains 2 minims of chloroform.

Elixir of Chloroform, Compound. (Chloroform Paregoric.)

Chloroformfl.oz. 3
Tincture of opium.....fl.oz. 3
Spirit of camphor.....fl.oz. 3
Aromatic spirit of ammonia.fl.oz. 3
Oil of cassia.....m. 40
Alcohol, to make.....fl.oz. 16

Mix the chloroform with the alcohol; then add the oil, aromatic spirit of ammonia, spirit of camphor and tincture of opium. Allow the mixture to stand a few hours, and filter in a well-covered funnel.

Each fluidram represents about 1 gr. of opium and about 11 minims of chloroform.—N. F.

This preparation was proposed by Dr. Hartshorne and is called chloroform

paregoric in some sections of the country.

Elixir of Cinchona. (Elixir of Calisaya.—Compound Elixir of Quinine.)

I.

Quinine sulfate.....gr.	30
Cinchonidine sulfate.....gr.	15
Cinchonine sulfate.....gr.	15
Compound tincture of cud-bear.....f.oz.	1½
Purified talc.....gr.	240
Aromatic elixir, to make...f.oz.	32

Dissolve the alkaloidal salts in 30 fluidounces of aromatic elixir, add the compound tincture of cudbear and enough aromatic elixir to make 32 fluidounces, triturate with the talcum, allow the mixture to stand several hours if convenient, occasionally shaking, then filter through paper, returning the first portions until the filtrate passes perfectly clear.—N. F.

This preparation is sometimes known as "elixir of cinchona from alkaloids." The formula replaces that given for elixir of cinchona in previous editions of the N. F. which was directed to be made from tincture of cinchona and is believed to produce a practical equivalent of the older preparation with the advantage of giving no reaction with salts of iron. It also replaces Detanated Elixir of Cinchona and Compound of Quinine.

The formula of the older N. F. in which tincture of cinchona was employed is also here given.

II.

Tincture of cinchona.....f.oz.	5
Simple syrup.....f.oz.	4
Glycerin.....f.oz.	4
Aromatic elixir.....f.oz.	19

Mix the liquids, allow to stand as long as convenient, and filter through a wetted filter.—N. F. (1st edition.)

Each fluidram represents nearly 2 gr. of yellow cinchona.

III. A. B. Taylor's formula:

Yellow cinchona.....gr.	420
Sweet orange peel, recently dried.....gr.	210
Ceylon cinnamon.....gr.	105

Coriander.....gr.	105
Anise.....gr.	25
Caraway.....gr.	25
Cardamom.....gr.	25
Cochineal.....gr.	25
Brandy.....f.oz.	9
Simple syrup.....f.oz.	9
Water, alcohol, each, to make.....f.oz.	32

Reduce the orange peel to moderately fine powder by contusion in an iron mortar, add the other solids previously reduced to a moderately fine powder, moisten with the brandy, pack in a percolator, add the remainder of the brandy, then percolate with a mixture of 1 volume of alcohol and 3 of water so as to obtain 23 fluidounces of percolate and to the latter add the simple syrup.

This is almost identical with Elixir of Cinchona, Compound, which see.

IV.

Yellow cinchona.....gr.	480
Sweet orange peel, fresh.....gr.	480
Cinnamon.....gr.	180
Tincture of cardamon.....f.dr.	1
Simple syrup.....f.oz.	8
Diluted alcohol, to make...f.oz.	32

Contuse the orange peel, in an iron mortar, to moderately fine powder, add the other drugs in moderately fine powder, extract by percolation with diluted alcohol so as to obtain 24 fluidounces of percolate; to the latter add the syrup.

Elixir of Cinchona and Beef.

Elixir of Cinchona, Beef and Iron.

Elixir of Cinchona, Beef, Iron and Strychnine.

For above, see Elixir of Beef and its combinations.

Elixir of Cinchona and Bismuth.

Elixir of Cinchona, Bismuth and Iron.

Elixir of Cinchona, Bismuth, Iron and Pepsin.

Elixir of Cinchona, Bismuth, Iron, Pepsin and Strychnine.

Elixir of Cinchona, Bismuth, Iron and Strychnine.

Elixir of Cinchona, Bismuth and Pepsin.

For above, see Elixir of Bismuth and its combinations.

Elixir of Cinchona, Calcium Lactophosphate and Iron.

See Elixir of Calcium Lactophosphate and its combinations.

Elixir of Cinchona and Coca. (Compound Elixir of Cinchona.)

Fluid extract of cinchona...fl.dr. 10
Fluid extract of coca.....fl.dr. 10
Tincture of cacao.....fl.oz. 2½
Simple elixir.....fl.oz. 11

Mix, and filter if necessary.

Each fluidram represents about 4½ gr. each of cinchona and coca.

Elixir of Cinchona, Compound. (Sim's Elixir of Calisaya.)

Yellow cinchona.....av.oz. ½
Sweet orange peel.....av.oz. ¼
Ceylon cinnamon.....gr. 60
Coriandergr. 60
Cochinealgr. 20
Anisegr. 15
Cardamomgr. 15
Carawaygr. 15
Brandyfl.oz. 5
Simple syrup.....fl.oz. 5
Diluted alcohol, to make...fl.oz. 16

Mix the drugs, reduce to coarse powder and extract by percolation in the usual manner, using the brandy as a first, and diluted alcohol as a second menstruum, until 11 fluidounces of percolate are obtained. To the latter add the syrup and filter.—Cinc. Acad. Pharm.

This is almost identical with Elixir of Cinchona No. III, which see.

Elixir of Cinchona, Detannated.

Instead of using a detannated elixir of cinchona, the present N. F. directs that elixir of cinchona from alkaloids (see Elixir of Cinchona) be used but for those who wish to make the detannated elixir the formula of the older N. F. is here given:

I.

Detannated tinct. cinchona..fl.oz. 5
Simple syrup.....fl.oz. 4
Glycerinfl.oz. 4
Aromatic elixir.....fl.oz. 19

Mix the liquids and filter if necessary.

Each fluidram represents nearly 2 gr. of yellow cinchona.—N. F. (1st edition.)

II. Diehl's formula:

Yellow cinchona.....gr. 480
Curacao orange peel.....gr. 320
Coriandergr. 80
Cinnamongr. 60
Cardamomgr. 30
Anisegr. 20
Cocoa (any good brand)....gr. 160
Spirit of orange.....fl.dr. 3
Sugarav.oz. 10
Purified talcum.....av.oz. ½
Alcohol, water, each.....sufficient.

Reduce the cinchona, orange peel, spices, and cocoa together to a moderately fine powder, extract by slow percolation with a menstruum, consisting of 1 volume of alcohol with 3 of water so as to obtain 16 fluidounces of percolate.

Prepare hydrate of iron as directed under Detannated Tincture of Cinchona or under Elixir of Gentian, and detannate the above percolate as there directed, washing the residue, with a mixture similar to the menstruum used, until the liquid measures 24 fluidounces. To the latter add the spirit of orange and the talcum, shake well, washing the filter with the same liquid that was used before until the filtrate measures 26 fluidounces. To the filtrate add the sugar, and dissolve by agitation; strain, or filter, if this be necessary.

III. Lime process:

Yellow cinchona, fine powdergr. 480
Quicklimegr. 360

Slake the lime in the least quantity of water, mix intimately with the bark, moisten with alcohol, pack in a glass percolator, and percolate slowly with alcohol as a menstruum in the usual manner until 8 fluidounces are obtained. The first portions of the percolate must be tested with solution of ferric chlorid; so long as this liquid affords a discoloration it must be returned to the percolator.

Prepare flavoring as follows:

Oil of orange peel.....	fl.dr 2
Oil of caraway.....	fl.dr. 1
Oil of cassia.....	fl.dr. 1
Oil of anise.....	fl.dr. ½
Alcohol	fl.oz. 1

Triturate 1 fluidounce of this mixture with 60 gr. of purified talcum, ½ fluidounce of alcohol and 1 of water, and filter.

To 12 fluidounces of simple syrup add 5 gr. of citric acid, previously dissolved in a very small amount of water, and mix this with the percolate, subsequently adding 11 fluidounces of water. Then to this add the flavoring mixture, mix well, and filter the whole. Finally, add through the filter enough of a mixture of equal volumes of diluted alcohol and simple syrup to make 32 fluidounces.

The lime takes the part of the ferric hydrate in No. II.

IV. Fenner's formula, modified:

Yellow cinchona.....	gr. 480
Sweet orange peel, fresh....	gr. 480
Saigon cassia	gr. 120
Coriander	gr. 120
Red rose petals.....	gr. 120
Nutmeg	gr. 40
Star-anise	gr. 40
White of one egg,	
Sugar	av.oz. 8
Alcohol	fl.oz. 4
Diluted alcohol, water,	
each	sufficient.

Mix the cinchona, cassia, coriander, rose nutmeg, and star-anise, reduce to No. 50 powder, and extract by the usual method of percolation, with diluted alcohol, so as to obtain 16 fluidounces of percolate. To this add the egg-white, previously beaten with a portion of the percolate. Agitate thoroughly, allow to stand for 24 hours, agitating occasionally, and then strain. Contuse the orange peel in an iron mortar to coarse powder, macerate with the alcohol for 2 days, agitating occasionally, decant the liquid, pack the residue in a percolator, pass the previously-obtained detannated percolate through this drug, and when all has passed continue percolation with water until the total percolate measures 24 fluidounces. In this dissolve the

sugar by agitation, add the alcoholic decantate which was reserved, and then enough of a mixture of equal parts of diluted alcohol and simple syrup to make 32 fluidounces, and filter the whole.

The color of this preparation may be heightened by adding compound tincture of cudbear.

The original process is here modified by a slight change in the quantities of the drug so as to reduce the preparation to the strength of that of the N. F., and also by a slight change in the menstruum.

Of the five formulas here given, it is the least satisfactory because detannation with egg-white is less satisfactory than with ferric hydrate or lime.

Elixir of Cinchona, Gentian and Iron Chlorid.

Elixir of cinchona.....	fl.oz. 10
Tincture of iron citrochlorid.....	fl.dr. 2
Fluid extract of gentian.....	fl.dr. 2
Simple elixir.....	fl.oz. 5½
Mix and filter.	

Each fluidram represents about 1 gr. each of gentian and cinchona and about 1 m. of tincture of iron chlorid.

Elixir of Cinchona, Gentian and Iron Malate.

Malate of iron ("scales")...	gr. 128
Extract of gentian.....	gr. 40
Tincture of vanilla.....	fl.dr. 2
Oil of cinnamon.....	drop 1
Water, hot.....	fl.oz. 1
Simple syrup.....	fl.oz. 4
Elixir of cinchona.....	fl.oz. 6
Aromatic elixir, to make...	fl.oz. 16

Dissolve the iron salt and extract in the water, add the other ingredients and filter.

Each fluidram represents about 1 gr. of gentian and ½ gr. of cinchona, and contains 1 gr. of iron malate.

The malate of iron to be used should not be the ferrated extract of apples, but the pure malate of iron which appears in the scale form.

Elixir of Cinchona and Hypophosphites.

Calcium hypophosphite.....	gr. 128
Sodium hypophosphite.....	gr. 128

Hypophosphorous acid, 30%.gr. 30
Waterfl.oz. 2
Elixir of cinchona, to make.fl.oz. 16

Dissolve the hypophosphites in the water, add acid and the elixir of cinchona, and filter.

Each fluidram contains 1 gr. each of the hypophosphites of calcium and sodium.—N. F.

Elixir of Cinchona and Iron. (Fer-rated Elixir of Cinchona or Calisaya.)

Iron phosphate, soluble.....gr. 256
Water, boiling.....fl.oz. 1
Elixir of cinchona, to make.fl.oz. 16

Dissolve the iron phosphate in the water, allow the liquid to cool, add the elixir, and filter.

Each fluidram contains 2 gr. of iron phosphate.—N. F.

Elixir of Cinchona, Iron and Bismuth.

See Elixir Bismuth, Cinchona and Iron.

Elixir Cinchona, Iron, Bismuth and Strychnine.

See Elixir Bismuth, Cinchona, Iron and Strychnine.

Elixir of Cinchona, Iron and Pepsin.

Glycerite of pepsin.....fl.oz. 3
Elixir of cinchona and iron.fl.oz. 12

Mix, allow to stand a few days, if convenient, then filter, if necessary.

Each fluidram represents 1 gr. of pepsin and about 1½ gr. of iron phosphate.—N. F.

Elixir of Cinchona, Iron and Phosphorus.

Spirit of phosphorous.....fl.dr. 7½
Elixir of cinchona and iron,
to make.....fl.oz. 16

Each fluidram contains 1/200 gr. of phosphorus, 2 gr. of iron phosphate, and represents nearly 2 gr. of cinchona.

Elixir of Cinchona and Iron "Protoxid."

Solution of iron "protoxid".fl.oz. 1½
Glycerinfl.oz. 1½
Elixir of cinchona.....fl.oz. 13

Mix the solution and the glycerin, and add the elixir.

Elixir of Cinchona, Iron and Strychnine.

Strychnine sulfate.....gr. 1¼
Distilled water.....m. 75
Elixir of cinchona and iron,
to make.....fl.oz. 16

Dissolve the strychnine sulfate in the water, add the elixir, and filter if necessary.

Each fluidram contains 1/100 gr. of strychnine sulfate, and about 2 gr. of iron phosphate.—N. F.

Elixir of Cinchona and Pepsin.

I.

Pepsin, pure.....gr. 128
Hydrochloric acid.....m. 30
Detannated elixir of cin-
chona or elixir of cin-
chona, to make.....fl.oz. 16

Dissolve by agitation and filter, using purified talcum, if necessary.

II.

Quinine sulfate.....gr. 16
Cinchonine sulfategr. 8
Elixir of pepsin.....fl.oz. 16

Dissolve the alkaloidal salts in the elixir and filter if necessary.

Elixir of Cinchona, Pepsin and Strychnine.

Quinine sulfate.....gr. 15
Cinchonine sulfate.....gr. 7½
Cinchonine sulfate.....gr. 7½
Strychnine sulfate.....gr. 1¼
Elixir of pepsin, to make..fl.oz. 16

Dissolve the alkaloidal salts in the elixir, and filter, if necessary.

Each fluidram represents small quantities of cinchona alkaloids, 1/100 gr. of strychnine sulfate, and 1 gr. of pepsin.—N. F.

Elixir of Cinchona and Strychnine.

Strychnine sulfate.....gr. 1¼
Detannated elixir of cin-
chonafl.oz. 16

Dissolve by agitation.

Each fluidram contains 1/100 gr. of strychnine sulfate, and represents nearly 2 gr. of cinchona.

Elixir of Cinchonidine.

Cinchonidine sulfate.....gr. 128
Simple elixir.....fl.oz. 16

Dissolve by agitation, and filter, if necessary.

Each fluidram contains 1 gr. of cinchonidine sulfate.

Elixir of Cinchonidine and Ammonium Valerianate.

Elixir of Cinchonidine, Ammonium Valerianate and Iron Pyrophosphate.

Elixir of Cinchonidine, Ammonium Valerianate, Iron Pyrophosphate and Quinine.

Elixir of Cinchonidine, Ammonium Valerianate, Iron Pyrophosphate and Strychnine.

Elixir of Cinchonidine, Ammonium Valerianate and Quinine.

Elixir of Cinchonidine, Ammonium Valerianate, Quinine and Strychnine.

Elixir of Cinchonidine, Ammonium Valerianate and Strychnine.

For above, see Elixir of Ammonium Valerianate and its combinations.

Elixir of Cinchonidine and Iron.

Iron pyrophosphate, soluble.....gr. 256

Cinchonidine sulfate.....gr. 128

Distilled water, hot.....fl.dr. 6

Simple elixir.....fl.oz. 15

Dissolve the iron pyrophosphate in the water, and the cinchonidine in the elixir; mix the two solutions and filter if necessary.

Each fluidram contains 1 gr. of cinchonidine sulfate and 2 gr. of iron pyrophosphate.

Elixir of Cinchonidine, Iron Phosphate and Strychnine.

See Elixir of Iron Phosphate, Cinchonidine and Strychnine.

Elixir of Cinchonidine, Iron and Strychnine.

Make this either by adding $1\frac{1}{4}$ gr. of strychnine sulfate, dissolved in a small quantity of hot distilled water, to elixir of cinchonidine and iron, or the elixir of iron phosphate, cinchonidine and strychnine may be employed, which see.

Elixir of Coca. (Elixir of Erythroxyton.)

Fluid extract of coca.....fl.oz. 2

Alcohol.....fl.oz. 1

Simple syrup.....fl.oz. 2

Tincture of vanilla.....fl.dr. 2

Purified talcum.....gr. 120

Aromatic elixir, to make.....fl.oz. 16

Mix the fluid extract with the alcohol, syrup and $10\frac{1}{2}$ fluidounces of aromatic elixir, add the purified talcum and incorporate the latter thoroughly. Let the mixture stand during 48 hours, if convenient, shaking occasionally; then filter, add the tincture of vanilla to the filtrate, and pass the remainder of the elixir through the filter.

Each fluidram represents $7\frac{1}{2}$ gr. of coca.—N. F.

Elixir of Coca, Beef and Iron.

See Elixir of Beef and its combinations.

Elixir of Coca and Cinchona.

See Elixir of Cinchona and Coca.

Elixir of Coca and Guarana. (Compound Elixir of Cocoa.)

Fluid extract of coca.....fl.oz. 2

Fluid extract of guarana.....fl.oz. 2

Purified talcum.....gr. 120

Compound elixir of taraxacum.....fl.oz. 12

Mix the liquids, and thoroughly incorporate the purified talcum with the mixture; let it stand during 48 hours, if convenient, occasionally agitating, then filter.—N. F.

Each fluidram represents $7\frac{1}{2}$ gr. each of coca and guarana.

Elixir of Coca and Phosphorus.

Spirit of phosphorus.....fl.dr. 15

Elixir of coca, to make.....fl.oz. 16

Mix and filter if necessary.

Each fluidram contains $1/100$ gr. of phosphorus and represents $6\frac{1}{2}$ gr. of coca.

Elixir of Codeine.

Codeine sulfate.....gr. 16

Simple elixir.....fl.oz. 16

Dissolve by agitation.

Each fluidram contains $\frac{1}{8}$ gr. of codeine sulfate.

Elixir of Codeine and Terpin Hydrate.

See Elixir Terpin Hydrate and Codeine.

Elixir of Corydalis, Compound. (Alterative Elixir.—Compound Elixir of Turkey Corn.)

Fluid extract of turkey corn	f.oz. 1
Fluid extract of stillingia	f.oz. 1
Fluid extract of prickly ash bark	f.dr. 4
Fluid extract of blue flag	f.oz. 1½
Alcohol	f.oz. 2
Potassium iodid	gr. 360
Aromatic elixir, to make	f.oz. 16

Mix the alcohol with the fluid extracts, dissolve the potassium iodid in the mixture, and add the aromatic elixir. Let the mixture stand a few days, if convenient, and filter.

Each fluidram contains 3 gr. of potassium iodid, and small quantities of the several fluid extracts.—N. F.

Elixir of Crampbark, Compound. (Compound Elixir of Viburnum Opulus.)

Fluid extract of crampbark	f.dr. 10
Fluid extract of aletris (unicorn root)	f.dr. 10
Fluid extract of bethroot	f.oz. 2½
Compound elixir of taraxacum	f.oz. 11

Mix, allow to stand a few days, if convenient, and filter.—N. F.

Elixir of Croton Chloral Hydrate. (Elixir of Butyl Chloral Hydrate.)

Croton chloral hydrate	gr. 256
Alcohol	f.oz. 1
Tincture of cacao	f.oz. 2
Simple elixir, to make	f.oz. 16

Dissolve the croton chloral in the alcohol, add the tincture and elixir, and filter, if necessary.

Each fluidram contains 2 gr. of croton chloral hydrate.

Elixir of Croton Chloral Hydrate and Quinine.

Quinine sulfate	gr. 128
Elixir of croton chloral hydrate	f.oz. 16

Reduce the quinine salt to fine powder, add the elixir, dissolve by agitation, and filter, if necessary.

Each fluidram contains 1 gr. of quinine sulfate and 2 gr. of croton chloral hydrate.

Elixir of Curacao. (Curacao Cordial.)

Spirit of curacao	m. 125
Orris root, fine powder	gr. 30
Citric acid	gr. 50
Purified talc	gr. 120
Alcohol	f.oz. 4
Simple syrup	f.oz. 8
Distilled water, to make	f.oz. 16

Mix the spirit of curacao with the alcohol, add the orris root, talc, and 3 fluidounces of water. Allow the mixture to stand 12 hours, occasionally agitating; then pour it on a wetted filter, returning the first portions of the filtrate until it runs through clear, and pass enough water through the filter to make the filtrate measure 8 fluidounces. In this dissolve the citric acid, and finally add the syrup.—N. F.

Elixir of Damiana. (Elixir of Turnera.)

Fluid extract of damiana	f.oz. 2½
Purified talc	gr. 120
Alcohol	f.oz. 4
Glycerin	f.oz. 1
Aromatic elixir	f.oz. 8½

Mix the fluid extract with the alcohol, add the glycerin and elixir. Incorporate the talc thoroughly with the mixture by trituration, allow to stand, with occasional agitation, during 24 hours, if convenient, and then filter.

Each fluidram represents nearly 10 gr. of damiana.—N. F.

Elixir of Damiana, Iron, Nux Vomica and Phosphorus.

Fluid extract of damiana	f.oz. 2
Tincture of nux vomica	f.dr. 10½
Iron pyrophosphate, soluble	gr. 128
Elixir of phosphorus	f.oz. 4
Alcohol	f.oz. 2
Distilled water, hot	f.dr. 4
Simple elixir, to make	f.oz. 16

Mix the fluid extract, tincture, elixir of phosphorus, alcohol, and 6 fluidounces of simple elixir, also dissolve the iron salt in the water, mix the two liquids, add the remainder of the simple elixir, and filter, if necessary, in a well-covered funnel.

Each fluidram represents 7½ gr. of damiana and about 1 gr. of nux vomica, and contains 1/200 gr. of phosphorus and 1 gr. of iron pyrophosphate.

Elixir of Damiana, Iron and Phosphorus.

Fluid extract of damiana...	f.oz.	2
Elixir of phosphorus.....	f.oz.	4
Iron pyrophosphate, soluble..	gr.	128
Alcohol	f.oz.	1
Distilled water, hot.....	f.dr.	4
Simple elixir, to make.....	f.oz.	16

Mix the fluid extract, elixir of phosphorus, alcohol, and 8 fluidounces of simple elixir, dissolve the iron pyrophosphate in the water, mix the two liquids, add the remainder of the elixir, and filter, if necessary, in a well-covered funnel.

Each fluidram contains 1/200 gr. of phosphorus and 1 gr. of iron pyrophosphate and represents 7½ gr. of damiana.

Elixir of Damiana, Nux Vomica and Phosphorus.

Fluid extract of damiana...	f.oz.	2
Tincture of nux vomica....	f.dr.	10½
Elixir of phosphorus.....	f.oz.	2
Alcohol	f.oz.	2
Simple elixir, to make.....	f.oz.	16

Mix the above ingredients in the order given and filter, if necessary, in a well-covered funnel.

Each fluidram represents 1/200 gr. of phosphorus, about 1 gr. of nux vomica, and 7½ gr. of damiana.

Elixir of Damiana and Phosphorus.

Elixir of phosphorus.....	f.oz.	8
Fluid extract of damiana...	f.oz.	2
Alcohol	f.oz.	2
Simple elixir.....	f.oz.	4

Mix the elixir of phosphorus, alcohol, and fluid extract and add the simple elixir.

Each fluidram represents 1/100 gr. of phosphorus and 7½ gr. of damiana.

Elixir of Damiana, Phosphorus and Strychnine.

Elixir of phosphorus.....	f.oz.	8
Fluid extract of damiana...	f.oz.	2
Alcohol	f.oz.	2
Strychnine sulfate.....	gr.	1¼
Simple elixir.....	f.oz.	4

Mix the elixir of phosphorus, alcohol, and fluid extract and add the simple elixir, having first dissolved the alkaloidal salt in the latter.

Each fluidram represents 7½ gr. of

damiana and contains 1/100 gr. each of phosphorus and strychnine sulfate.

Elixir of Dandelion.

Fluid extract of dandelion..	f.oz.	6
Simple elixir, to make.....	f.oz.	16

Each fluidram represents 22½ gr. of dandelion.

Elixir of Dandelion, Compound.

See Elixir of Taraxacum, Compound.

Elixir of Dewberry Root, Compound.

Dewberry root, coarse powder	av.oz.	2¼
Galls, powder.....	gr.	120
Kino, powder.....	gr.	120
Cinnamon, powder.....	gr.	60
Clove, powder	gr.	30
Capsicum, powder.....	gr.	5
Tincture of opium.....	f.dr.	4
Spirit of peppermint.....	m.	45
Brandy	f.oz.	16
Sugar	av.oz.	7½

Macerate all of the above, sugar excepted, for 14 days, shaking occasionally; express, filter, and in the filtrate dissolve the sugar.—D. C. Form.

Elixir, Digestive, Compound.

See Elixir of Pepsin, Compound.

Elixir Diuretic.

Buchu	av.oz.	1¼
Juniper berries.....	av.oz.	¼
Cubeb	av.oz.	¼
Bitter orange peel.....	gr.	360
Coriander	gr.	180
Cassia buds.....	gr.	180
Anise	gr.	60
Caraway	gr.	60
Cardamom	gr.	20
Potassium acetate.....	av.oz.	1½
Spirit of nitrous ether....	f.oz.	1½
Sugar	av.oz.	4
Alcohol, water, each to make	f.oz.	16

Reduce the drugs to moderately coarse powder, extract by percolation in the usual manner with a menstruum composed of 1 volume of alcohol and 2 of water so as to obtain 17½ fluidounces of percolate. Evaporate the latter on a water bath to 11½ fluidounces, in this dissolve the sugar and potassium acetate, when cool add the spirit and enough water to make 16 fluidounces, and filter.—Cinc. Acad. Pharm.

Elixir, Emmenagogue.

I.

Rue	gr. 96
Spanish saffron.....	gr. 96
Savin	gr. 96
Socotrine aloes.....	gr. 192
Adjuvant elixir, to make....	f.oz. 16

Reduce the drugs to moderately fine powder, mix with 12 fluidounces of adjuvant elixir, macerate for 7 days, agitating occasionally, filter, and through the filter add the remainder of the elixir.

Each fluidram represents $\frac{3}{4}$ gr. each of rue, saffron and savin, and $\frac{1}{4}$ gr. of aloes.

II.

Fluid extract of blue cohosh	f.dr. 12 $\frac{3}{4}$
Fluid extract of juniper berries	f.dr. 10 $\frac{3}{4}$
Fluid extract of blue flag....	f.dr. 4 $\frac{1}{4}$
Alcohol	f.oz. 2
Simple elixir, to make.....	f.oz. 16
Mix and filter.	

Each fluidram represents 6 gr. of blue cohosh, 5 of juniper berries, and 2 of blue flag.

Elixir of Eucalyptus. (Aromatic or Compound Elixir of Eucalyptus.)

Fluid extract of eucalyptus..	f.oz. 2
Alcohol	f.oz. 2
Purified talc.....	gr. 120
Syrup of coffee.....	f.oz. 6
Compound elixir of taraxacum	f.oz. 6

Mix the fluid extract with the alcohol, then add the other ingredients, shake the mixture occasionally during 48 hours, if convenient, and filter.—N. F.

Each fluidram represents 7 $\frac{1}{2}$ gr. of eucalyptus.

This preparation is also known as aromatic or compound elixir of eucalyptus.

Elixir of Eucalyptus, Compound.

Eucalyptus leaves.....	av.oz. 2
Licorice root.....	av.oz. 1
Wild cherry.....	av.oz. 1
Sugar	av.oz. 5
Compound spirit of orange..	f.dr. 1
Alcohol, water, each.....	sufficient.

Mix the three drugs, reduce them to coarse powder, and extract by percolation with a mixture of 1 volume of al-

cohol and 2 of water so as to obtain 13 fluidounces of percolate. To this add the spirit and sugar, and dissolve the latter by agitation.

This is said to be a good vehicle for disguising the taste of quinine.

Elixir Flavoring No. 29. (Elixir Flavoring No. 508.)

Oil of sweet orange peel....	f.oz. 4
Oil of caraway seed.....	f.dr. 2
Oil of coriander.....	f.dr. 2
Oil of cassia.....	f.dr. 2
Oil of anise (or oil of nutmeg)	f.dr. 1
Alcohol	f.oz. 15

The oils used must be perfectly fresh.

One fluidounce of this flavor is used for 1 gallon of elixir.

This flavoring for elixirs is used to some extent and for this reason is here inserted.

Elixir of Galls, Aromatic.

Nutgall	av.oz. 1
Nutmeg	av.oz. $\frac{1}{2}$
Cinnamon	av.oz. $\frac{1}{2}$
Brandy	sufficient.
Elixir of orange.....	f.oz. 10

Reduce the drugs to moderately coarse powder, moisten with brandy, pack in a percolator and percolate until 6 fluidounces of liquid are obtained, to which add the elixir.

Elixir de Garus. (Elixir Gari.—Aromatic Elixir.)

I.

Aloes	av.oz. $\frac{1}{2}$
Myrrh	av.oz. $\frac{1}{4}$
Cinnamon	gr. 30
Canella	gr. 30
Clove	gr. 30
Nutmeg	gr. 30
Spanish saffron.....	gr. 8
Orange flower water.....	f.oz. 1
Water	f.oz. 8
Simple syrup.....	f.oz. 16
Alcohol	f.oz. 16

Reduce the drugs, except the saffron, to a moderately coarse powder, macerate for 24 hours in a small still with 8 fluidounces of alcohol and the water, then distil off 8 fluidounces; to this distillate add the saffron, the remainder of the alcohol and the orange flower water, macerate for 2 days, agitating occasionally; add the syrup, and filter.

II.

Oil of cassia.....	drops	8
Oil of clove.....	drops	8
Oil of mace.....	drops	8
Saffron	gr.	20
Tincture of vanilla.....	fl.dr.	½
Alcohol	fl.oz.	5
Orange flower water.....	fl.oz.	6½
Sugar	av.oz.	7

Mix the oil, saffron, tincture and alcohol, macerate for 2 days, agitating occasionally; strain to remove the saffron, add the orange flower water and sugar, agitate until the latter is dissolved, and filter.—H. modified.

Elixir of Gentian.

I.

Fluid extract of gentian....	fl.dr.	4
Compound spirit of carda- mom	fl.dr.	3
Solution of tersulfate of iron.....	fl.dr.	3
Water of ammonia, 10%.....	fl.dr.	3½
Alcohol, distilled water, aromatic elixir, each....	sufficient	

Dilute the solution of tersulfate of iron with 4 fluidounces of cold water, and add it, constantly stirring, to the ammonia water, previously diluted with an equal volume of cold water. Collect the precipitate on a well-wetted muslin strainer, allow it to drain completely, return it to the vessel, mix it intimately with 4 fluidounces of water, and again drain. Repeat this operation once more with the same quantity of water. When the precipitate has been completely drained for the third time, fold the strainer, and press it gently so as to remove the water as completely as possible without loss of magma; then remove the magma into a tared bottle, and ascertain its weight. Now add to the magma one-fifth of its weight of alcohol, the fluid extract, compound spirit and 12 fluidounces of aromatic elixir, and shake the mixture occasionally during 24 hours. Filter through paper, and pass enough aromatic elixir through the filter to make the product measure 16 fluidounces.—N. F. (revised edition).

Each fluidram represents about 2 gr. of gentian.

II.

Extract of gentian.....	gr.	70
Aromatic spirit.....	fl.dr.	3
Tincture of vanilla.....	fl.dr.	2
Simple syrup.....	fl.oz.	1
Aromatic elixir, to make....	fl.oz.	16

Dissolve the extract in about 2 fluid-ounces of aromatic elixir, add the syrup, spirit, tincture and remainder of the elixir. Filter, if necessary.—N. F. (1st edition.)

This is of about the same strength as the preceding.

III. This preparation is also made according to one of the formulas for compound elixir of gentian which follow.

Elixir of Gentian, Compound.

I.

Stronger compound infusion of gentian.....	fl.oz.	4
Aromatic elixir.....	fl.oz.	12

II.

Gentian	gr.	256
Coriander	gr.	60
Bitter orange peel.....	gr.	60
Compound spirit of orange.....	fl.dr.	1
Egg albumen.....	gr.	120
Citric acid.....	gr.	5
Sugar	av.oz.	5
Alcohol, water, each.....	sufficient	

Mix the first three ingredients, reduce them to moderately fine powder, and percolate with a mixture of 5 volumes of alcohol and 9 of water until 13 fluidounces of percolate are obtained. To this percolate add the albumen and citric acid, agitate until the latter is dissolved, and filter. To the filtrate add the spirit and sugar, agitate until the latter is dissolved and filter again.—D. C. Form.

In the absence of dried egg albumen, the white of 1 egg may be employed.

III.

Compound tincture of gen- tian	fl.oz.	5
Simple elixir.....	fl.oz.	11
Each fluidram represents 2 gr. of gen- tian.		

Elixir of Gentian, Cinchona and Iron Malate.

See Elixir of Cinchona and its combinations.

Elixir of Gentian, Ferrated.

The N. F. uses this title as a synonym for elixir of gentian and iron phosphate, but many preparations of this name on the market are made with iron pyrophosphate instead of the phosphate. See Elixir of Gentian and Iron Phosphate and Elixir of Gentian and Iron Pyrophosphate.

Elixir of Gentian, Glycerinated.

Fluid extract of gentian.....m.	75
Fluid extract of dandelion...fl.dr.	2
Acetic ether.....m.	38
Phosphoric acid, 85%.....gr.	64
Tincture of sweet orange peel	fl.dr. 2
Compound tincture of cardamom	fl.oz. 1
Solution of saccharin.....fl.dr.	4
Glycerin	fl.oz. 6½
Sugar	av.oz. 3½
Sherry wine, to make.....	fl.oz. 16

Dissolve the sugar in 5 fluidounces of wine, add the other ingredients previously mixed, and enough wine to make 16 fluidounces. Allow to stand 24 hours if convenient, and filter.—N. F.

Elixir of Gentian with Iron Chlorid Tincture.

Tincture of citro-chlorid of iron	fl.dr. 13
Elixir of gentian, to make.....	fl.oz. 16
Mix and filter, if necessary.	

Each fluidram represents about ¾ gr. of ferric chlorid and nearly 2 gr. of gentian.—N. F.

Elixir of Gentian and Iron Phosphate. (Ferrated Elixir of Gentian.—Ferrophosphated Elixir of Gentian.)

Iron phosphate, soluble.....gr.	128
Distilled water, hot.....fl.dr.	4
Elixir of gentian, to make.....	fl.oz. 16

Dissolve the iron phosphate in the water, add the elixir of gentian, and filter, if necessary.

Each fluidram represents 1 gr. of iron phosphate and nearly 2 gr. of gentian.—N. F.

Elixir of Gentian and Iron Pyrophosphate.

Iron pyrophosphate, soluble.gr.	128
Distilled water, hot.....fl.dr.	4
Elixir of gentian, to make.....	fl.oz. 16

Dissolve the iron salt in the water, add the elixir, and filter, if necessary.

Each fluidram contains 1 gr. of iron salt and represents nearly 2 gr. of gentian.

Elixir of Gentian and Phosphorus.

Fluid extract of gentian....fl.dr.	10
Elixir of phosphorus.....fl.oz.	8
Compound elixir of taraxacum	fl.oz. 5
Aromatic elixir, to make.....	fl.oz. 16

Each fluidram represents 1/100 gr. of phosphorus and nearly 5 gr. of gentian.

Elixir of Glycerophosphates.

Sodium glycerophosphate (75%)	gr. 180
Calcium glycerophosphate...gr.	64
Phosphoric acid, 85%.....gr.	57
Glycerin	fl.oz. 4¾
Aromatic elixir.....	fl.oz. 4¾
Distilled water, to make.....	fl.oz. 16

Dissolve the glycerophosphates and acid in about 5 fluidounces of distilled water, add the glycerin and elixir and the remainder of the water, mix well, and filter.

Each fluidram contains 1 gr. of absolute sodium glycerophosphate and ½ gr. of calcium glycerophosphate.—N. F.

Elixir of Glycyrrhizin.

Ammoniated glycyrrhizin....gr.	128
Simple elixir.....	fl.oz. 16

Dissolve the glycyrrhizin in the elixir by agitation, and filter if necessary.

This is used as a substitute for elixir of licorice as a disguising agent for quinine.

Elixir of Glycyrrhizin, Aromatic.

Coriander	gr. 28
Caraway	gr. 28
Cinnamon	gr. 24
Star-anise	gr. 16
Tonka	gr. 16
Canella	gr. 8
Nutmeg	gr. 8
Clove	gr. 8
Ammoniated glycyrrhizin....gr.	160
Oil of sweet orange.....drops	10
Simple syrup	fl.oz. 7
Alcohol	fl.oz. 6
Water, to make.....	fl.oz. 16

Mix the drugs, and reduce to fine powder. Mix the alcohol with the oil, add 4½ fluidounces of water, and percolate the drugs with this menstruum.

To the percolate add the syrup and the glycyrrhizin dissolved in a small amount of hot water, and if necessary to make a total of 16 fluidounces add sufficient water through the percolator, and add this percolate to the liquid.—Remington's formula.

Elixir of Grindelia.

Fluid extract of grindelia..	f.oz.	1
Compound spirit of orange...	m.	75
Alcohol	f.dr.	14
Compound elixir of taraxacum	f.oz.	13

Mix them, allow the mixture to stand a few days, if convenient, then filter.

Each fluidram represents nearly 4 gr. of grindelia.—N. F.

Elixir of Grindelia, Aromatic.

Fluid extract of grindelia..	f.oz.	4
Canada snakeroot, coarse powder	gr.	60
Oil of clove.....	drops	10
Alcohol	f.oz.	3
Simple elixir	f.oz.	9

Dissolve the oil in the alcohol, add the other ingredients, macerate for several days, and filter.

Each fluidram represents 15 gr. of grindelia.

Elixir of Guaiac.

Tincture of guaiac	f.oz.	4
Potassium carbonate	gr.	20
Water	f.dr.	2
Glycerin	f.oz.	4
Compound elixir of taraxacum	f.oz.	4
Simple syrup	f.oz.	4

Dissolve the potassium carbonate in the water, add to the tincture of guaiac and to this mixture add the remaining ingredients in the order given above.

Elixir of Guarana.

I.

Fluid extract of guarana....	f.oz.	3
Aromatic elixir	f.oz.	3
Compound elixir of taraxacum	f.oz.	9

Mix them; allow the mixture to stand during 48 hours, if convenient, and filter.—N. F.

Each fluidram represents about 12 gr. of guarana.

II.

Guarana, powder	av.oz.	3¼
Light magnesia	gr.	180
Oil of cinnamon	drops	5
Simple syrup	f.dr.	13
Diluted alcohol	sufficient	
Sand, clean and coarse....	av.oz.	6½

Mix the guarana and magnesia, moisten with 2½ fluidounces of diluted alcohol, set aside for 24 hours, then mix with the sand, pack in a percolator, percolate with diluted alcohol until 13 fluidounces of liquid are obtained, then remove the mass from the percolator, inclose it in a cloth and express in a tincture press; to the percolate add the oil and syrup, and make up to 16 fluidounces by addition of the expressed liquid, previously concentrating the latter, if necessary, by evaporation.

Each fluidram represents about 11 gr. of guarana.—H. modified and Brit. Form.

Elixir of Guarana and Coca.

See Elixir of Coca and Guarana.

Elixir of Guarana, Compound. (Elixir of Guarana and Celery.)

See Elixir of Celery and Guarana.

Elixir of Helonias.

Fluid extract of helonias....	f.oz.	4
Simple elixir	f.oz.	12

Mix, allow to stand for 24 hours and filter.

Each fluidram represents 15 gr. of helonias.

Elixir of Helonias, Compound. (Compound Elixir of Squaw-Wine. Compound Elixir of Mitchell.—Helonias Cordial.)

Fluid extract of false unicorn (helonias dioica)	f.oz.	1
Fluid extract of blue cohosh..	f.oz.	1
Fluid extract of crampbark..	f.oz.	1
Fluid extract of mitchella..	f.oz.	2
Purified talcum	av.oz.	½
Aromatic elixir, to make....	f.oz.	16

Mix and filter.

Each fluidram represents 15 gr. of mitchella, and nearly 4 gr. each of helonias, blue cohosh and crampbark.

Elixir of Hops.

Fluid extract of hops.....	f.oz.	2
Purified talc	gr.	120
Tincture of vanilla.....	f.dr.	4

Compound elixir of taraxacumfl.oz. 2

Aromatic elixir, to make...fl.oz. 16

Triturate the fluid extract with the talc, then gradually add the compound elixir of taraxacum, tincture of vanilla, and the aromatic elixir. Allow the mixture to stand several days, if convenient, occasionally agitating and then filter.

Each fluidram represents $7\frac{1}{2}$ gr. of hops.—N. F.

Elixir of Hypophosphites.

Calcium hypophosphite.....gr. 384

Sodium hypophosphite.....gr. 128

Potassium hypophosphite...gr. 128

Hypophosphorous acid, 30% m. 30

Glycerinfl.dr. 4

Compound spirit of cardamomfl.dr. 4

Waterfl.oz. 7

Aromatic elixir, to make...fl.oz. 16

Dissolve the hypophosphites and the acid in the water; then add the glycerin, compound spirit and the aromatic elixir. Filter, if necessary.

Each fluidram contains 3 gr. of calcium hypophosphite and 1 gr. each of sodium and potassium hypophosphites.—N. F.

Elixir of Hypophosphite of Calcium.

See Elixir of Calcium Hypophosphite.

Elixir of Hypophosphites and Cinchona.

See Elixir of Cinchona and Hypophosphites.

Elixir of Hypophosphites, Compound.

The elixir of hypophosphites with iron is sold and dispensed under this name.

Elixir of Hypophosphite of Iron.

See Elixir of Iron Hypophosphite.

Elixir of Hypophosphites with Iron.

Calcium hypophosphite.....gr. 180

Sodium hypophosphite.....gr. 128

Potassium hypophosphite...gr. 64

Ferrous sulfate pure, clear crystalsgr. 96

Hypophosphorous acid, 30% m. 30

Distilled waterfl.oz. 4

Simple syrupfl.oz. 4

Aromatic elixir, to make...fl.oz. 16

Dissolve the hypophosphites in 3 fluid-ounces of water, and add the syrup. Dis-

solve the iron salt in the remainder of the water, and mix this with the other solution. Then add 6 fluidounces of aromatic elixir, set the mixture aside, in a cold place, for 12 hours, and filter from the deposited calcium sulfate. Finally, add the acid to the filtrate, and pass enough aromatic elixir through the filter to make 16 fluidounces.

Each fluidram contains $\frac{1}{2}$ gr. of iron (ferrous) hypophosphite, 1 gr. each of the hypophosphites of calcium and sodium, and $\frac{1}{2}$ gr. of potassium hypophosphite.—N. F.

Elixir of Hypophosphites of Iron and Quinine.

I.

Iron hypophosphite.....gr. 128

Potassium citrategr. 128

Quinine sulfategr. 128

Calcium hypophosphite.....gr. 30

Spirit of orangefl.dr. 2

Orange flower water.....fl.oz. 1

Sugarav.oz. $4\frac{1}{2}$

Alcohol, distilled water, each

..... sufficient

Dissolve the iron hypophosphite with the aid of the potassium citrate in the orange flower water, and enough water to make the solution measure $6\frac{1}{2}$ fluidounces, and in this dissolve the sugar. Triturate the quinine sulfate with 5 fluidounces of alcohol, add a solution of the calcium hypophosphite in 4 fluidrams of water, and shake the mixture occasionally during 1 hour; filter, and wash the filter with enough alcohol to make 7 fluidounces. Add this solution to the spirit of orange, mix this with the iron solution and sugar solution previously prepared, and filter the whole.

Each fluidram contains 1 gr. each of the hypophosphites of iron and quinine.

II.

Solution of iron hypophosphitefl.dr. 13

Quinine hypophosphite.....gr. 128

Hypophosphorous acid....sufficient

Simple elixir, to make...fl.oz. 16

Mix the quinine hypophosphite with 8 fluidounces of elixir, add enough of the acid to dissolve the quinine, add the solution of iron hypophosphite, and then

enough elixir to make 16 fluidounces, and filter.

This is of the same strength as the preceding.

Elixir of Hypophosphites of Iron, Quinine and Strychnine.

This may be prepared by dissolving 1¼ gr. of strychnine sulfate in 4 fluidrams of distilled water, and adding enough of the preceding elixir to make 16 fluidounces.

Elixir of Hypophosphites with Malt.

See Elixir of Calcium Hypophosphite and its combinations.

Elixir of Hypophosphite of Sodium.

Sodium hypophosphite.....gr. 256
Hypophosphorous acid, 30%...m. 39
Aromatic elixir, to make...f.oz. 16

Dissolve the hypophosphite in about 13½ fluidounces of elixir by agitation, then add the acid and the remainder of the elixir, and filter.

Each fluidram contains 2 gr. of sodium hypophosphite.—N. F.

Elixir of Hypophosphites with Tar.

See Elixir of Calcium Hypophosphite and its combinations.

Elixir of Iodids of Arsenic and Mercury.

See Elixir of Arsenic and its combinations.

Elixir of Iodid of Calcium.

See Elixir of Calcium Iodid.

Elixir of Iodid of Potassium.

Potassium iodidgr. 640
Aromatic elixir of licorice, to makef.oz. 16
Dissolve by agitation.

Each fluidram contains 5 gr. of potassium iodid.

Elixir of Iodid of Potassium, Compound. (Alterative Elixir.)

Potassium iodidgr. 640
Tincture of citrochlorid of ironf.dr. 10¾
Spirit of orange.....f.dr. 4
Fluid extract of saxifrage.f.dr. 12
Fluid extract of stillingia.f.dr. 12
Fluid extract of menispermumf.dr. 12
Fluid extract of helonias...f.dr. 12
Sugarav.oz. 4½
Water, to make.....f.oz. 16

Dissolve the potassium iodid in the water, add the tincture of iron, and in this mixture dissolve the sugar by agitation. Mix the fluid extracts, add the spirit, then the previously prepared solution, allow the whole to stand for 2 days, and filter.

Each fluidram contains 5 gr. of potassium iodid, and represents about ½ gr. of ferric chlorid, and about 5½ gr. each of saxifraga, stillingia, menispermum and helonias.

Elixir of Six Iodids.

Arsenic iodidgr. 1
Mercuric iodidgr. 1
Manganese iodidgr. 13
Sodium iodidgr. 128
Potassium iodidgr. 128
Solution of iron iodid.....m. 15
Sodium hypophosphite.....sufficient
Simple elixir, to make....f.oz. 16

Add the six iodids to the elixir, dissolve by agitation, add a few grains of sodium hypophosphite, or sufficient to decolorize the liquid, and filter.

Each fluidram contains 1/128 gr. each of arsenic and mercury iodids, 1/12 gr. of ferrous iodid, 1/10 gr. of manganese iodid, and 1 gr. each of sodium and potassium iodids.

Elixir of Iodo-Bromid of Calcium, Compound. (Compound Elixir of Calcium Bromid with Iodids.)

Calcium bromidgr. 256
Sodium iodidgr. 256
Potassium iodidgr. 256
Magnesium chloridgr. 256
Compound fluid extract of sarsaparillaf.oz. 2
Compound fluid extract of stillingiaf.oz. 2
Aromatic elixirf.oz. 4
Sugarav.oz. 4½
Water, to make.....f.oz. 16

Dissolve the salts in the water add the sugar and to this syrup add the fluid extracts previously mixed with the aromatic elixir; after standing for 2 days, filter and add the remainder of the water.

Elixir of Iron Albuminate.

Flavored solution of iron albuminate is used as elixir of iron albuminate. Any solution of iron albuminate when con-

taining flavor may be used. See Solution of Iron Albuminate, No. I or II.

Elixir of Iron and Ammonium Valerianate.

See Elixir of Ammonium Valerianate and its combinations.

Elixir of Iron and Arsenic, Bitter. (Putzel's Elixir.)

Tincture of iron citrochlorid	f.oz.	2
Quinine sulfate	gr.	128
Strychnine sulfate	gr.	1
Sodium arsenate, exsiccated.....	gr.	1¼
Alcohol	fl.dr.	4
Aromatic elixir, to make.....	f.oz.	16

Mix all but the tincture, dissolve by agitation, add the tincture, and filter.

Before the sodium arsenate is weighed a sufficient quantity of it should be powdered and dried at 100 deg. C. until it ceases to lose weight. It will then still contain two molecules of water, which cannot be driven out at a temperature below 148 deg. C. If a perfectly crystalline salt, without any trace of efflorescence, is available, this may be used. In this case 1¾ gr. of the crystallized salt should be substituted for the 1¼ gr. of the dried.

Each fluidram contains 1 gr. of quinine sulfate, 1/128 gr. of strychnine sulfate, 1/100 gr. of dried sodium arsenate, and 7½ m. of tincture of iron chlorid. —N. Y. Hosp.

Elixir of Iron, Arsenic and Strychnine.

Solution of iron (ferrous) chlorid	fl.dr.	6½
Solution of arsenous acid.....	fl.dr.	6¾
Strychnine sulfate	gr.	1¼
Distilled water	fl.dr.	4
Solution of arsenous acid.....	fl.dr.	6¾
Glycerin	f.oz.	1
Aromatic elixir, to make.....	f.oz.	16

Mix the ferrous chlorid solution with the glycerin and 4 fluidounces of elixir. To this add the solution of arsenous acid, the strychnine dissolved in the water by the aid of heat and the remainder of the elixir. Filter if necessary.

Each fluidram contains 1 gr. of ferrous chlorid, 1/32 gr. of arsenous acid and 1/100 gr. of strychnine sulfate.

Elixir of Iron and Arsenic Chlorids.

Elixir of Iron, Arsenic and Mercury Chlorids.

See Elixir of Arsenic and its combinations.

Elixir of Iron, Beef and Cinchona.

Elixir of Iron, Beef, Cinchona and Strychnine.

Elixir of Iron, Beef and Coca.

Elixir of Iron, Beef and Malt.

See Elixir of Beef and its combinations.

Elixir of Iron and Berberine.

See Elixir of Berberine and its combinations.

Elixir of Iron and Bismuth.

Elixir of Iron, Bismuth and Cinchona.

Elixir of Iron, Bismuth, Cinchona and Pepsin.

Elixir of Iron, Bismuth, Cinchona, Pepsin and Strychnine.

Elixir of Iron, Bismuth, Cinchona and Strychnine.

Elixir of Iron, Bismuth and Pepsin.

Elixir of Iron, Bismuth, Pepsin and Quinine.

Elixir of Iron, Bismuth and Quinine.

Elixir of Iron, Bismuth and Strychnine.

See Elixir of Bismuth and its combinations.

Elixir of Iron, Calcium Lactophosphate and Cinchona.

Elixir of Iron and Cinchona.

Elixir of Iron, Cinchona and Pepsin.

Elixir of Iron, Cinchona and Strychnine.

See Elixir of Cinchona and its combinations.

Elixir of Iron Chlorid Tincture and Gentian.

See Elixir of Gentian and Iron Chlorid Tincture.

Elixir of Iron, Cinchona and Phosphorus.

See Elixir of Cinchona and its combinations.

Elixir of Iron and Cinchonidine.

Elixir of Iron, Cinchonidine and Strychnine.

See Elixir of Cinchonidine and its combinations.

Elixir of Iron, Damiana, Nux Vomica and Phosphorus.**Elixir of Iron, Damiana and Phosphorus.**

See Elixir of Damiana and its combinations.

Elixir of Iron Hypophosphite.

Solution of iron hypophosphitefl.dr. 13

Aromatic elixir, to make...fl.oz. 16

Mix, allow the mixture to stand a few days in a cool place, and filter, if necessary.

Each fluidram contains 1 gr. of ferric hypophosphite.—N. F.

Elixir of Iron and Hypophosphites.

See Elixirs of the Hypophosphites.

Elixir of Iron Malate, Cinchona and Gentian.

See Elixir of Cinchona and its combinations.

Elixir of Iron Lactate.

Iron lactate, in crusts.....gr. 128

Potassium citrategr. 384

Waterfl.oz. 2

Aromatic elixir, to make..fl.oz. 16

Dissolve the iron and potassium salts in the water by the aid of a gentle heat, add the elixir and filter.

Each fluidram contains 1 gr. of iron lactate.—N. F.

Elixir of Iron and Malt.

See Elixir of Malt and Iron.

Elixir of Iron, Malt and Beef.

See Elixir of Beef and its combinations.

Elixir of Iron and Pepsin. (Ferrated Elixir of Pepsin.)

See Elixir of Pepsin and Iron.

Elixir of Iron, Pepsin and Quinine.

Iron pyrophosphate, soluble..gr. 256

Quinine hydrochlorid.....gr. 32

Distilled water, hot.....fl.oz. 1

Elixir of pepsin, to make..fl.oz. 16

Dissolve the iron salt in the water, add the elixir and the quinine salt, agi-

tate occasionally until dissolved, and filter.

Each fluidram contains 2 gr. of iron pyrophosphate, $\frac{1}{4}$ gr. of quinine hydrochlorid, and nearly 1 gr. of pepsin.

Elixir of Iron Peptonate.

I. Howard's formula:

Peptone	gr. 365
Solution of dialyzed iron.....	fl.oz. $3\frac{1}{4}$
Solution of soda.....	fl.dr. $2\frac{1}{2}$
Alcohol	fl.dr. 13
Aromatic elixir	fl.dr. 5
Distilled water, to make....	fl.oz. 16

Dissolve the peptone in 32 fluidounces of distilled water, and add to the iron solution previously diluted with 32 fluidounces of distilled water. Then add enough of a dilute solution of soda to exactly neutralize the mixture. This is shown by the character of the precipitate which at the end of the reaction collects in large flakes and separates rapidly from the clear liquid. Wash the precipitate by decantation several times with water and drain on muslin or on a filter. Transfer the precipitate to a capsule, add the solution of soda diluted with 10 fluidrams of distilled water, stirring immediately and continuously until dissolved, then add 3 fluidounces of water, the elixir and alcohol, and lastly enough distilled water to make 16 fluidounces.

Care must be taken throughout the manipulations to avoid loss and so weaken the preparation.

The solution contains 0.7 per cent. of iron, corresponding to 1 p. c. of ferric oxide.

II.

Pepsin, pure	gr. 4
Dried egg albumen.....	gr. 30
Simple syrup	fl.dr. 4
Solution of dialyzed iron or	
iron oxychlorid	fl.dr. $12\frac{1}{2}$
Aromatic elixir	fl.dr. $12\frac{1}{2}$
Distilled water, to make....	fl.oz. 16

Dissolve the albumen in $3\frac{1}{4}$ fluidounces of water, add the pepsin and digest for 4 hours at 50 deg. C. Mix the syrup and solution of iron with 9 fluidounces of the water, then add to the pepsin solution and heat to 90 deg. C.

Cool, add the elixir and the remainder of the water. Set aside for 8 days and then decant the clear solution.

If to the above be added 32 gr. of crystal manganese chlorid, previously dissolved in 1 fluidram of water, it will constitute Solution of Iron and Manganese Peptonate.

III. The preparation under the title of Solution of Iron Peptonate may be dispensed as elixir of iron peptonate.

Elixir of Iron Phosphate.

Iron phosphate, soluble.....gr. 256
Water, hotfl.oz. 1
Aromatic elixir, to make...fl.oz. 16

Dissolve the iron phosphate in the water, mix this solution with the aromatic elixir, and filter if necessary.

Each fluidram contains 2 gr. of iron phosphate.—N. F.

Elixir of Iron Phosphate, Cinchonidine and Strychnine.

Iron phosphate, soluble.....gr. 256
Potassium citrategr. 32
Cinchonidine sulfategr. 64
Strychnine sulfategr. 1 1/4
Alcoholfl.oz. 1
Distilled water, hot.....fl.dr. 6
Aromatic elixir, to make...fl.oz. 16

Dissolve the iron phosphate and potassium citrate in the water, using gentle heat, if necessary. To 12 fluidounces of aromatic elixir, contained in a bottle, add the alcohol, and afterwards the alkaloidal salts, and agitate until the latter are dissolved, or nearly so. Then mix the two solutions, and, having shaken the mixture, add the remainder of the aromatic elixir. Finally, filter.

This elixir should preferably not be dispensed in a mixture with water, as the latter may cause separation of some of its constituents.

Each fluidram contains 2 gr. of iron phosphate, 1/2 gr. of cinchonidine sulfate, and 1/100 gr. of strychnine sulfate.—N. F. 1st edition.

Elixir of Iron Phosphate and Gentian.

See Elixir of Gentian and Iron Phosphate.

Elixir of Iron Phosphate, Quinine and Strychnine.

I.

Iron phosphate, soluble.....gr. 128
Quinine (alkaloid)gr. 64
Strychnine (alkaloid)gr. 2
Alcoholfl.oz. 2
Distilled water, warm....fl.dr. 6
Aromatic elixir, to make...fl.oz. 16

Dissolve the alkaloids in the alcohol and add 12 fluidounces of aromatic elixir, then dissolve the iron phosphate in the water, and add to the previous mixture. Finally, add the remainder of the aromatic elixir, and filter.

Each fluidram contains 1 gr. of iron phosphate, 1/2 gr. of quinine, and 1/64 gr. of strychnine.—N. F. (1st edition).

If the iron phosphate is acid, its solution should be very carefully neutralized with ammonia water.

This preparation has been discarded by the present N. F. in favor of the elixir of iron pyrophosphate, quinine and strychnine.

II. Hausmann's formula:

Strychnine (alkaloid)gr. 1 1/4
Quinine sulfategr. 64
Citric acidgr. 5
Iron phosphate, soluble.....gr. 256
Alcoholfl.oz. 3
Simple syrupfl.oz. 6
Distilled water, warm....fl.oz. 4
Orange flower water.....fl.oz. 3
Sodium bicarbonate.....sufficient

Triturate the strychnine and quinine sulfate with the acid until well mixed, and rub this mixture with the alcohol gradually added. Heat the syrup to about 65 deg. C., add to it the alcoholic liquid, and stir until clear. Dissolve the iron salt in the water, add the orange flower water, mix this with the preceding liquid, and allow to cool. Then add sodium bicarbonate in very small amounts, stirring thoroughly after each addition, until the elixir remains but slightly acid. Allow to stand for a few hours, then filter through white filter paper. Any excess of soda must be avoided.

III. Steven's formula:

Strychnine sulfate.....gr.	1¼
Quinine hydrochlorid.....gr.	128
Iron phosphate, soluble.....gr.	256
Potassium citrate.....gr.	32
Alcohol.....fl.oz.	1½
Distilled water, hot.....fl.oz.	1
Glycerin.....fl.dr.	18
Aromatic elixir, to make...fl.oz.	16

Dissolve the quinine salt in 10 fluid-ounces of elixir, mixed with the alcohol, by agitation, and mix this solution with the strychnine sulfate previously dissolved in 2 fluidrams of the water.

Dissolve the iron phosphate in 6 fluidrams of the water, add 2 fluidounces of glycerin and mix this solution with the preceding liquid. Now to this mixture add the potassium citrate dissolved in 1½ fluidounces of aromatic elixir mixed with 2 fluidrams of glycerin. Allow the whole to stand for several hours, then filter.

IV. Edél's formula:

Iron phosphate, soluble.....gr.	256
Quinine sulfate.....gr.	128
Strychnine sulfate.....gr.	1¼
Alcohol.....fl.oz.	2
Glycerin.....fl.oz.	2
Simple syrup.....fl.oz.	2
Distilled water, warm....fl.oz.	1
Aromatic elixir, to make...fl.oz.	16

Dissolve the strychnine salt in the alcohol, and add the quinine; mix the glycerin and syrup, and heat, and when warm add to the alkaloidal solution; continue heating carefully, until the quinine is dissolved, and add enough elixir to make 15 fluidounces. Dissolve the iron salt in the water, add this to previous liquid, let stand 3 or 4 hours, and filter.

V. Remington's formula:

Iron phosphate, soluble.....gr.	256
Quinine sulfate.....gr.	128
Strychnine sulfate.....gr.	1¼
Alcohol.....fl.oz.	1
Simple syrup.....fl.oz.	8
Aromatic elixir, to make...fl.oz.	16

Dissolve the iron phosphate in the syrup by the aid of heat, and raise the temperature to near the boiling point. Dissolve the alkaloidal salts in 6 fluidounces of aromatic elixir, contained in a flask, by the aid of heat, and while still

hot add this solution all at once to the iron solution, shaking immediately. Allow to stand 24 hours, then filter.

VI. See also Elixir of Iron, Quinine and Strychnine Phosphates, Elixir of Iron Pyrophosphate, Quinine and Strychnine, and Elixir of Iron, Quinine and Strychnine.

Elixir of Iron, Phosphorus, Quinine and Strychnine.

See Elixir of Phosphorus, Compound.

Elixir of Iron "Protoxid."

Solution of iron "protoxid".fl.oz. 2

Simple elixir.....fl.oz. 14

Elixir of Iron "Protoxid" and Cinchona.

See Elixir of Cinchona and its combinations.

Elixir of Iron Pyrophosphate.

Iron pyrophosphate, soluble..gr. 256

Distilled water, warm....fl.oz. 1

Aromatic elixir, to make...fl.oz. 16

Dissolve the iron pyrophosphate in the water, add the elixir, and filter, if necessary.

Each fluidram contains 2 gr. of iron pyrophosphate.—N. F.

Elixir of Iron Pyrophosphate and Ammonium Valerianate.**Elixir of Iron Pyrophosphate, Ammonium Valerianate and Cinchonidine.****Elixir of Iron Pyrophosphate, Ammonium Valerianate, Cinchonidine and Quinine.****Elixir of Iron Pyrophosphate, Ammonium Valerianate, Cinchonidine and Strychnine.****Elixir of Iron Pyrophosphate, Ammonium Valerianate, Cinchonidine and Strychnine.****Elixir of Iron Pyrophosphate, Ammonium Valerianate and Quinine.****Elixir of Iron Pyrophosphate, Ammonium Valerianate, Quinine and Strychnine.**

See Elixir of Ammonium Valerianate and its combinations.

Elixir of Iron Pyrophosphate and Gentian.

See Elixir of Gentian and its combinations.

Elixir of Iron Pyrophosphate and Quinine.

This may be prepared like elixir of iron pyrophosphate, quinine and strychnine, the strychnine to be omitted, of course.

Elixir Iron Pyrophosphate, Quinine and Strychnine.**I.**

Iron pyrophosphate, soluble.....gr.	256
Quinine sulfate.....gr.	64
Strychnine (alkaloid).....gr.	1
Citric acid.....gr.	5
Alcohol.....fl.oz.	4
Oil of orange (about 8 drops).....m.	5
Simple syrup.....fl.oz.	6
Ammonia water,	
Distilled water, to make...fl.oz.	16

Triturate the quinine, strychnine and acid together until minutely divided, then add the alcohol and oil. Warm the syrup slightly (to about 65 deg. C.) and add to it the turbid alcoholic mixture which upon stirring should become clear. To this add the iron salt previously dissolved in 5½ fluidounces of distilled water and then ammonia water, drop by drop, until the liquid is perfectly neutral to test paper. Finally add enough distilled water to make 16 fluidounces, and filter.—N. F.

Each fluidram contains 1/128 gr. of strychnine, ½ gr. of quinine sulfate and 2 gr. of iron pyrophosphate.

II. Thompson's formula:

Strychnine (alkaloid).....gr.	1¼
Quinine (alkaloid).....gr.	64
Iron pyrophosphate.....gr.	128
Alcohol.....fl.oz.	2
Distilled water, warm....fl.oz.	3
Simple syrup.....fl.oz.	3
Aromatic elixir.....fl.oz.	8

Dissolve the strychnine and quinine in the alcohol, also the iron salt in the water, mix the two solutions, add the syrup and then the elixir, and filter, if necessary.

III. Hausmann's formula:

Strychnine (alkaloid).....gr.	1¼
Quinine sulfate.....gr.	64
Citric acid.....gr.	5
Iron pyrophosphate, soluble.....gr.	256

Alcohol.....fl.oz.	3
Simple syrup.....fl.oz.	6
Distilled water, warm....fl.oz.	4
Orange flower water.....fl.oz.	3
Sodium bicarbonate.....	sufficient

Triturate together the alkaloids and the acid until thoroughly mixed; rub this with the alcohol gradually added. Heat the syrup to about 65 deg. C., add it to the alcoholic mixture, and stir until clear. Dissolve the iron salt in the water, and add the orange flower water; mix the two solutions, and when cold, add carefully sodium bicarbonate in small portions until the elixir remains but slightly acid. Allow to stand for a few hours, then filter through white filter paper. Excess of soda must be carefully avoided.

IV. Bechmann's formula:

Quinine sulfate.....gr.	120
Strychnine sulfate.....gr.	2
Iron pyrophosphate.....gr.	240
Sodium or ammonium citrate	
.....gr.	60
Alcohol.....fl.oz.	2
Water.....fl.oz.	1
Glycerin.....fl.oz.	3
Simple elixir, to make....fl.oz.	16

Put the quinine and strychnine in a flask, pour on the alcohol and 5 fluidounces of simple elixir, then place the flask in hot water, shaking occasionally until dissolved. Dissolve the iron in the water without heat, then add the sodium (or ammonium) citrate and the glycerin. Pour this solution into the previous solution and shake well. When cold add enough simple elixir to bring the quantity up to 16 fluidounces.

Elixir of Iron Pyrophosphate and Strychnine.

Iron pyrophosphate.....gr.	256
Strychnine sulfate.....gr.	1¼
Distilled water, hot.....fl.oz.	2
Simple elixir, to make....fl.oz.	16

Dissolve the iron salt and strychnine sulfate in the hot water, add the elixir, and filter.

Each fluidram contains 2 gr. of iron pyrophosphate and 1/100 gr. of strychnine sulfate.

Elixir of Iron, Quinine and Arsenic.

Tincture of iron citrochlorid	fl.dr.	8½
Quinine hydrochlorid	gr.	64
Solution of arsenous acid.....	m.	400
Simple elixir, to make.....	fl.oz.	16

Dissolve the quinine salt in about 12 fluidounces of elixir, by agitation, add the acid solution, the tincture and the remainder of the elixir, and filter.

Each fluidram contains 4 m. of tincture of iron citrochlorid, ½ gr. of quinine hydrochlorid, and 1/32 gr. of arsenous acid.

Elixir of Iron and Quinine Citrate. (Elixir of Iron and Quinine.)

Citrate of iron and quinine..	gr.	256
Water, warm	fl.oz.	1
Aromatic elixir, to make...	fl.oz.	16

Dissolve the citrate in the water, add the elixir, and filter.

Each fluidram contains 2 gr. of iron and quinine citrate.

Or prepare like elixir of iron, quinine and strychnine, which see, but omitting the strychnine.

Elixir of Iron and Quinine Hypophosphites.**Elixir of Iron, Quinine and Strychnine Hypophosphites.**

See the Elixirs of Hypophosphites for these.

Elixir of Iron and Quinine Hypophosphites.

See Elixir Hypophosphites of Iron and Quinine.

Elixir of Iron, Quinine and Strychnine.

Whenever elixir of iron, quinine and strychnine is asked for, the elixir of iron, quinine and strychnine phosphates of the U. S. P. or the preparation the formula for which is given below may be dispensed.

Tincture of citrochlorid of iron	fl.oz.	2
Quinine hydrochlorid	gr.	64
Strychnine sulfate	gr.	1¼
Alcohol	fl.dr.	4
Aromatic elixir, to make...	fl.oz.	16

Dissolve the alkaloidal salts in 12 fluidounces of elixir, then add the tincture and the alcohol, and finally, the

remainder of the elixir; filter if necessary.

Each fluidram represents about 1 gr. of ferric chlorid, ½ gr. of quinine hydrochlorid, and 1/100 gr. of strychnine sulfate.—N. F.

For other elixirs containing iron, quinine and strychnine, see Elixir of Iron Phosphate, Quinine and Strychnine, Elixir of Iron, Quinine and Strychnine Phosphates, and Elixir of Iron Pyrophosphate, Quinine and Strychnine.

Elixir of Iron, Quinine, Strychnine and Arsenic.

See Elixir of Iron and Arsenic, Bitter.

Elixir of Iron, Quinine and Strychnine Phosphates. (Elixir of Three or Triple Phosphates.)

Nearly all of the preparations dispensed under this name contain the iron as phosphate or pyrophosphate, and the quinine and strychnine in some other form than as phosphate. If it be desired to dispense such a preparation as "elixir of three phosphates," then any of the preparations made according to formulas given in this formulary under elixir of iron phosphate, or pyrophosphate, quinine and strychnine may be dispensed.

The following formulas do actually contain the three bases in the form of phosphates.

I.

Iron phosphate, soluble.....	gr.	128
Quinine (alkaloid)	gr.	64
Strychnine (alkaloid)	gr.	2
Phosphoric acid, U. S. P. or 85 per cent.....	m.	15
Or phosphoric acid, 50 p. c.....	m.	25
Acetic acid, 36 per cent.....	gr.	225
Ammonium carbonate	gr.	71
Alcohol	fl.oz.	1
Ammonia water, distilled water, aromatic elixir, each, to make	fl.oz.	16

Dissolve the quinine and strychnine in the alcohol, then add the phosphoric acid and 6 fluidounces of aromatic elixir. Add the ammonium carbonate to the acetic acid contained in a beaker or graduate, and when solution is complete, neutralize with ammonia water

and add enough distilled water to bring the volume up to 6 fluidrams. Mix the ammonium acetate solution with the solution of quinine and strychnine phosphates, and add enough aromatic elixir to make the liquid measure 14 fluidounces. Dissolve the iron salt in 4 fluidrams of distilled water by the aid of a gentle heat, and if the solution be acid to litmus paper, neutralize it exactly with ammonia water, add enough aromatic elixir to make 2 fluidounces, add this to the preceding liquid, and filter the whole.—U. S. P.

This preparation conforms in strength to that claimed for the majority of the elixirs of the market, containing in each fluidram 1 gr. of iron phosphate, and $\frac{1}{2}$ gr. of quinine and $\frac{1}{64}$ gr. of strychnine, all in the form of the phosphates. If an elixir of twice the strength be desired, it can readily be made by doubling the quantities of all the ingredients, except the aromatic elixir.

With some samples of iron phosphate, a slightly increased quantity of the ammonium acetate solution may be necessary, possibly owing to loss of water by evaporation and a consequent relative increase of the proportion of ammonia water.

II. Patch's formula:

Solution of iron chlorid, U. S. P.	fl.dr.	7½
Quinine (alkaloid)	gr.	110
Strychnine (alkaloid)	gr.	1
Phosphoric acid, U. S. P. (85 per cent.)	fl.dr.	2½
Distilled water	fl.dr.	2
Alcohol	fl.oz.	1
Simple elixir	fl.oz.	10
Simple syrup, to make	fl.oz.	16

Mix the iron solution, phosphoric acid and water, and in this mixture dissolve the alkaloids; to this solution add the syrup, and then elixir and alcohol previously mixed.

Some manufacturers place upon the market a so-called "permanent elixir of three phosphates," which contains the iron as citrochlorid; a preparation of this character would be well represented

by the elixir of iron, quinine and strychnine.

Elixir of Iron, Quinine and Zinc Valerianates.

See Elixirs of Valerianates of different bases.

Elixir of Iron Salicylate.

Iron salicylate	gr.	640
Distilled water, hot	fl.oz.	2¼
Glycerin	fl.oz.	2¼
Simple elixir, to make	fl.oz.	16

Dissolve the iron salt in the hot water and glycerin, add the elixir, allow to stand for a few days and filter.

Each fluidram contains 5 gr. of iron salicylate.

Elixir of Iron Salicylate, Compound.

Iron salicylate	gr.	640
Distilled water, hot	fl.oz.	2¼
Glycerin	fl.oz.	2¼
Fluid extract of colchicum root	fl.dr.	9
Deodorized tincture of opium	fl.dr.	4½
Simple elixir, to make	fl.oz.	16

Dissolve the iron salt in the hot water and glycerin, add the other ingredients, allow to stand a few days, and filter.

Each fluidram contains 5 gr. of iron salicylate and represents about $\frac{1}{4}$ gr. of colchicum root and 2 m. of deodorized tincture of opium.

Elixir of Iron Valerianate.

Iron valerianate	gr.	128
Alcohol	fl.oz.	1
Simple elixir	fl.oz.	15

Dissolve the iron salt in the alcohol, add the elixir, and filter.

Each fluidram contains 1 gr. of iron valerianate.

Elixir of Iron and Wild Cherry. (Ferrated Elixir of Wild Cherry.)

Iron pyrophosphate	gr.	128
Distilled water, hot	fl.dr.	4
Fluid extract of wild cherry	fl.oz.	2
Alcohol	fl.oz.	2
Simple elixir, to make	fl.oz.	16

Mix the alcohol and fluid extract, add the elixir, and then iron salt previously dissolved in the water, and filter through purified talcum.

Each fluidram contains 1 gr. of iron

pyrophosphate, and represents $7\frac{1}{2}$ gr. of wild cherry.

Elixir of Jaborandi. (Elixir of Pilocarpus.)

Fluid extract of jaborandi. .f.oz. 1
Syrup of coffee.f.oz. 3
Tincture of vanilla.f.dr. 4
Compound elixir of taraxacumf.oz. $11\frac{1}{2}$

Mix, allow the mixture to stand during 4 days, if convenient, and filter.

Each fluidram represents $3\frac{3}{4}$ gr. of jaborandi.—N. F.

Elixir of Juniper, Buchu and Potassium Acetate.

Elixir of Juniper, Buchu, Potassium Acetate and Uva Ursi.

See Elixir of Buchu and its combinations.

Elixir of Juniper and Potassium Acetate.

See Elixir of Potassium Acetate and Juniper.

Elixir of Kola.

Fluid extract of kola.f.oz. 2
Ammoniated glycyrrhizin.gr. 60
Saccharingr. 60
Oil of orange.drops 5
Waterf.oz. 7
Alcoholf.oz. $3\frac{1}{2}$
Simple syrupf.oz. $3\frac{1}{2}$
Simple elixir, to make.f.oz. 16

Dissolve the ammoniated glycyrrhizin in the water and in this dissolve the saccharin; add the syrup and alcohol, followed by the fluid extract of kola, to which has been added the oil of orange; set aside for 5 or 6 hours, agitating occasionally; filter, and add the simple elixir.

Or instead of the glycyrrhizin, $\frac{1}{2}$ to 1 fluidounce of glycerite of licorice may be used.

Each fluidram represents $7\frac{1}{2}$ gr. of kola.

Elixir of Lactophosphate of Calcium, Cinchona and Iron.

Elixir of Lactophosphate of Calcium.

See Elixir of Calcium Lactophosphate and its combinations.

Elixir of Licorice.

I.

Fluid extract of licorice.f.oz. 2
Magnesium carbonategr. 75
Aromatic elixirf.oz. 14
Triturate the fluid extract with the carbonate, add the elixir, shake the mixture occasionally during an hour, then filter.—N. F. (revised edition).

II.

Extract of licorice, purified. .gr. 480
Ammonia watersufficient
Aromatic elixir, to make. .f.oz. 16
Triturate the extract with 12 fluidounces of elixir, to 10 fluidounces of this add ammonia water in slight excess, add the reserved portion, then the remainder of the elixir, and filter if necessary.—N. F., 1st edition.

This preparation is superior to No. I. A more superior preparation than either of the above can be made by mixing 1 fluidounce of glycerite of licorice with 15 fluidounces of elixir, and filtering.

Elixir of glycyrrhizin, which see, is an acceptable substitute for this preparation.

III.

Purified extract of licorice. .av.oz. $3\frac{1}{4}$
Anisated solution of ammoniaf.oz. $3\frac{1}{4}$
Fennel waterf.oz. $9\frac{1}{2}$
Dissolve the extract in the water and add the solution.—Germ. Pharm.

The mixture is turbid and must be shaken before use.

A more acceptable preparation and one more readily made may be obtained by mixing $6\frac{1}{2}$ fluidounces of glycerite of licorice, 5 of fennel water and $3\frac{1}{4}$ of anisated solution of ammonia.

This last preparation is best known by the names Elixir e Succo Lequiritiæ, Elixir Pectorale, Pectoral Elixir, Liquor Pectoralis, Brust Tropfen, Brust Elixir, and Bryst (or Brost) Draaber.

Elixir of Licorice with Ammonium Chloride, Compound.

See Elixir of Ammonium Chlorid, etc.

Elixir of Licorice, Aromatic. (Compound Elixir of Licorice—"Quinine Elixir.")

This elixir is employed for disguising the taste of bitter medicines, particularly quinine. No acid should be used because it dissolves the quinine and makes its bitter taste more perceptible, and at the same time liberates the glycyrrhizin from its combination with ammonia and renders it insoluble, and therefore valueless for the purpose of disguising or modifying taste.

I.

Fluid extract of licorice...	fl.oz.	2
Oil of clove.....	m.	6
(about 10 drops.)		
Oil of cinnamon (Ceylon)...	m.	6
(about 10 drops.)		
Oil of nutmeg.....	m.	4
(about 6 drops.)		
Oil of fennel.....	m.	12
(about 20 drops.)		
Purified talc	gr.	120
Aromatic elixir	fl.oz.	14

Triturate the oils with the talc and gradually add the fluid extract and elixir. Shake occasionally during an hour, set the mixture aside for a day or two if convenient, then filter.—N. F.

A better preparation will be obtained if 1 fluidounce of glycerite of licorice be substituted for the fluid extract.

II.

Licorice root, coarse powder	av.oz.	2
Wild cherry, coarse powder	av.oz.	1
Red rose petals, coarse powder	av.oz.	½
Orange peel, fresh, cut small	av.oz.	½
Alcohol	fl.oz.	3
Glycerin	fl.oz.	3
Water, to make.....	fl.oz.	16

Mix the drugs, moisten them with 4 fluidounces of water and set in a warm place for 12 hours; then, having mixed the alcohol and glycerin with 6 fluidounces of water, pack the drugs in a percolator and pour the mixture upon them; set aside for 12 hours, then begin to percolate, adding water to the drugs

until 16 fluidounces of percolate have been obtained.

III.

Select licorice root, cut and slightly bruised	av.oz.	2¼
Ammonia water	fl.dr.	4
Glycerin	fl.oz.	1
Water	fl.oz.	16
Simple syrup	fl.oz.	6
Alcohol	fl.oz.	4
Spirit of orange.....	fl.dr.	3
Oil of cinnamon (Ceylon).....	drops	2

Macerate the drug with the glycerin, water and ammonia water for 24 hours, then strain, boil for 10 minutes, filter, evaporate the filtrate to 6 fluidounces; to this add the simple syrup and the spirit and oil, the latter two previously dissolved in the alcohol.

IV.

Licorice root	av.oz.	2
Anise	gr.	40
Caraway	gr.	40
Cinnamon	gr.	40
Clove	gr.	20
Nutmeg, powder	gr.	10
Spirit of orange.....	fl.dr.	4
Tincture of vanilla.....	fl.dr.	2
Sugar	av.oz.	8
Diluted alcohol	sufficient	

Mix the drugs, reduce them to coarse powder, and extract them in the usual way, using diluted alcohol as the menstruum until 11 fluidounces of percolate are obtained. In the latter dissolve the sugar by agitation, strain, and add the tincture and spirit.

V.

See Elixir of Glycyrrhizin, Aromatic, which may be used as an aromatic elixir of licorice.

Elixir of Licorice, Compound.

Glycerite of licorice.....	fl.oz.	1
Wine of antimony.....	fl.oz.	1
Paregoric	fl.oz.	2
Spirit of nitrous ether.....	fl.dr.	4
Aromatic elixir, to make.....	fl.oz.	16

The above replaces "brown mixture" in the form of an elixir.

The name compound elixir of licorice is also applied to aromatic elixir of licorice, but should be applied to the above only.

Elixir of Life. (Elixir Vitæ.)

Syrup of iron iodid.....f.dr. 2
 Syrup of hypophosphites....f.dr. 2
 Glycerinf.dr. 2
 Water, to make.....f.oz. 3
 —New York Hospitals.

Elixir of Lithium Bromid.

Lithium bromidgr. 640
 Aromatic elixir, to make...f.oz. 16
 Dissolve the solids in about 14 fluid-ounces of aromatic elixir, by agitation; add the remainder of the aromatic elixir and filter.

Each fluidram contains 5 gr. of lithium bromid.—N. F.

Elixir of Lithium Citrate.

Lithium citrategr. 640
 Aromatic elixir, to make...f.oz. 16
 Dissolve by agitation, and filter.
 Each fluidram contains 5 gr. of lithium citrate.—N. F.

Elixir of Lithium Salicylate.

Lithium salicylategr. 640
 Aromatic elixir, to make...f.oz. 16
 Dissolve by agitation, and filter.
 Each fluidram contains 5 gr. of lithium salicylate.—N. F.

Elixir of Long Life. (Elixir ad Longam Vitam—Elixir of Life—Compound Tincture of Aloes—“Swedish Bitters”—Kronessens—Wunder Kronessens—Hjerne’s Testament Drops—Elixir Sacrum—Lebens Essenz—Jenaer Tropfen.)

Aloesav.oz. ½
 Rhubarbgr. 35
 Gentiangr. 35
 Zedoarygr. 35
 Spanish saffrongr. 35
 Waterf.oz. 4½
 Alcoholf.oz. 13

Mix the drugs in coarse powder with the two liquids, macerate for 3 days, agitating frequently; express and filter.—Germ. Pharm.

Sometimes 35 gr. of agaric is added to the other drugs and the menstruum employed is diluted alcohol.

The following is a simple formula which may be used for the preparation of this ancient and complicated remedy:

Tincture of aloes.....f.oz. 8
 Tincture of rhubarb.....f.oz. 2

Compound tincture of gen-
 tianf.oz. 1
 Waterf.oz. 1
 Alcoholf.oz. 4

Elixir of Lupulin.

Fluid extract of lupulin....f.oz. 1
 Magnesium carbonate.....av.oz. 1
 Simple elixir, to make.....f.oz. 16
 Triturate the fluid extract with the magnesium carbonate, add the elixir, transfer to a bottle, set aside for several hours, and filter.

The above is of the strength usually furnished by manufacturers; Diehl’s formula, which is largely used, directs the use of 2 fluidounces of the fluid extract to the pint of finished elixir.

Elixir of Lupulin and Sodium Bromid.

Fluid extract of lupulin...f.dr. 10½
 Purified talcumgr. 120
 Sodium bromidgr. 640
 Aromatic elixir of licorice,
 to makef.oz. 16

Triturate the fluid extract with the talcum, add some of the elixir, transfer to a bottle, add the sodium salt and the remainder of the elixir, dissolve by agitation, and filter after several hours.

Each fluidram represents 5 gr. of lupulin and contains 5 gr. of sodium bromid.

Elixir of Malt, Beef and Iron.

See Elixir of Beef and its combinations.

Elixir of Malt with Calcium and Sodium Hypophosphites.

See Elixir of Calcium Hypophosphite and its combinations.

Elixir of Malt and Iron.

Extract of malt.....f.oz. 4
 Iron phosphate, soluble.....gr. 128
 Water, warmf.dr. 4
 Aromatic elixir, to make...f.oz. 16

Dissolve the iron phosphate in the water by the aid of heat, mix the solution with the extract of malt, and add the elixir. Set the mixture aside for 24 hours, and filter.

Each fluidram represents 1 gr. of iron phosphate and 15 m. of extract of malt.
 Extract of malt, most suitable for this

preparation, should have about the consistence of Peru balsam at a temperature of 15 deg. C.—N. F.

Elixir of Manaca and Salicylates.

Fluid extract of manaca.....	f.oz.	2½
Sodium salicylate	av.oz.	1¾
Potassium salicylate	gr.	384
Lithium salicylate	gr.	96
Simple elixir, to make.....	f.oz.	16

Dissolve the salicylates in some of the elixir, add the fluid extract and the remainder of the elixir, allow to stand for a few hours, and filter through talcum.

Each fluidram contains 6 gr. of sodium salicylate, 3 gr. of potassium salicylate, and ¾ gr. of lithium salicylate, and represents 10 gr. of manaca.

Elixir of Matico.

Fluid extract of matico.....	f.oz.	3
Alcohol	f.oz.	1
Aromatic elixir	f.oz.	12

Mix, and filter through purified talcum if necessary.

Elixir of Matico, Compound.

Fluid extract of matico.....	f.oz.	3
Fluid extract of buchu.....	f.oz.	1½
Fluid extract of cubeb.....	f.oz.	1½
Alcohol	f.oz.	2
Simple elixir	f.oz.	4
Compound elixir of taraxacum	f.oz.	4

Mix, set aside for 3 days, and filter through talcum.

Each fluidram represents 11 gr. of matico and nearly 6 gr. each of buchu and cubeb.

Elixir Mercury and Arsenic Iodids.

See Elixir of Arsenic and its combinations.

Elixir of Mercury, Arsenic and Iron Chlorids.

See Elixirs of Chlorids for above.

Elixir of Morphine Valerianate.

Morphine valerianate	gr.	16
Simple elixir	f.oz.	16

Dissolve by agitation, and filter.

Each fluidram contains ¼ gr. of morphine valerianate.

Elixir of Nitroglycerin, Compound.

Spirit of nitroglycerin.....	m.	128
Fluid extract of digitalis.....	m.	64
Tincture of strophanthus.....	f.dr.	4¼
Strychnine sulfate	gr.	2½

Distilled water	f.dr.	2
Aromatic elixir, to make.....	f.oz.	16

Dissolve the strychnine sulfate in the water by the aid of heat, allow it to cool, and add the other ingredients.

Each fluidram contains 1/100 m. of nitroglycerin, 1/50 gr. of strychnine sulfate, ½ m. of tincture of digitalis, and 2 m. of tincture of strophanthus.

Elixir of Nux Vomica, Bismuth and Pepsin.

See Elixir of Bismuth and its combinations.

Elixir of Nux Vomica, Damiana, Iron and Phosphorus.

See Elixir of Damiana and its combinations.

Elixir of Nux Vomica and Phosphorus.

Tincture of nux vomica.....	m.	65
Elixir of phosphorus, to make	f.oz.	4

Mix them.

This preparation should be freshly made, when wanted for use.—N. F.

Each fluidram represents 2 m. of tincture of nux vomica, and about 1/60 gr. of phosphorus.

Elixir of Orange.

Oil of orange.....	m.	100
Alcohol	f.oz.	14
Water	f.oz.	22
Simple syrup	f.oz.	28
Purified talcum	av.oz.	½

Mix the oil and alcohol, add the talcum, shake well, then add the other ingredients in small portions at a time, agitating well after each addition, and filter.—U. S. P. 1880 modified.

The oil used should be a perfectly fresh sweet oil of orange peel.

Simple syrup is used in place of the sugar and corresponding amount of the water in the U. S. P. 1880 formula.

Elixir of Orange, Compound. (Elixir Aurantiorum Composition. — Compound Wine of Orange. — Vinum Amarum, Bitter Wine. — Elixir Stomachicum, Stomachic Elixir. — Elixir Viscerale Hoffmanni. — Hoffmann's Stomach Elixir. — Pomeranzen Elixir.)

Bitter orange peel, cut.....	gr.	1600
Cinnamon, bruised	gr.	320

Potassium carbonate.....gr.	80
Extract of gentian.....gr.	160
Extract of wormwood.....gr.	160
Extract of buckbean.....gr.	160
Extract of cascarrilla.....gr.	160
Sherry winefl.oz.	17½

Macerate the orange peel, cinnamon, and potassium carbonate with the sherry wine for 8 days, agitating occasionally; express the liquid portion, in the latter dissolve the extracts, and filter.

The National Formulary also recognizes what is identically the same preparation under the title of Compound Wine of Orange and which is intended to be used in place of the above; in the latter no extracts are used, but the drugs themselves are mixed with the orange peel, cinnamon, and potassium carbonate, the whole being extracted by percolation. See Wine of Orange, Compound. The N. F. formula should receive preference.

Elixir of Pancreas.

Take 1 pig pancreas, chop into pieces, and macerate in a cool place for 3 days in a mixture of—

Waterfl.oz.	32
Glycerinfl.oz.	6½
Hydrochloric acidfl.dr.	5

Strain, add ½ fluidram of oil of orange and enough glycerin to make 48 fluidounces, and filter.

The oil of orange and last portion of glycerin may be replaced by simple elixir.

Elixir of pancreatin may be used in place of this preparation.

Elixir of Pancreatin.

Pancreatin, puregr.	128
Sodium bicarbonategr.	16
Waterfl.oz.	2
Simple elixir, to make.....fl.oz.	16

Macerate the pancreatin in the water for 24 hours, add the sodium bicarbonate, triturate until dissolved, gradually add the elixir, and filter.

Each fluidram represents 1 gr. of pancreatin.

The elixir of pancreas may be substituted for the above, if deemed desirable.

Elixir of Pancreatin and Bismuth.

See Elixir of Bismuth and its combinations.

Elixir of Pancreatin, Bismuth and Pepsin.

Citrate of bismuth and ammoniumgr.	128
Pancreatin, puregr.	64
Pepsin, puregr.	64
Distilled water, hot.....fl.oz.	1
Ammonia watersufficient	
Glycerinfl.oz.	2
Waterfl.oz.	2
Tincture of cudbear.....fl.dr.	2
Simple elixir, to make.....fl.oz.	16

Triturate the bismuth salt with the water, allow the insoluble portion to subside, decant the clear portion, to the residue add ammonia water very gradually, until solution occurs, carefully avoiding any excess, and mix this liquid with the decanten portion.

Macerate the pepsin and pancreatin with the glycerin and water for 24 hours, agitating occasionally; add the tincture, the bismuth solution, and the elixir, and filter through purified talcum.

One fluidounce of glycerite of bismuth and sodium tartrate may be used for the bismuth salt of the above and the water and ammonia water used to dissolve it.

Each fluidram contains 1 gr. each of pepsin and of bismuth salt, and ½ gr. of pancreatin.

Elixir of Pancreatin, Potassium and Rhubarb.

See Elixir of Rhubarb and its combinations.

Elixir of Papain.

Papaingr.	256
Glycerinfl.oz.	2
Aromatic elixirfl.oz.	14

Mix, macerate for 7 days, agitating occasionally, and filter.

Each fluidram contains 2 gr. of papain.

Elixir of Paraldehyde. (25 per cent.)

Paraldehydefl.oz.	4
Glycerinfl.oz.	2
Alcoholfl.oz.	5
Tincture of cardamom.....fl.dr.	2
Oil of orangem.	15

Oil of cinnamon.....m. 15
Compound tincture of cud-
bearfl.dr. 2
Aromatic elixir, to make....fl.oz. 16
Mix the ingredients in the order given, and filter, if necessary.

Each fluidram contains 15 m. of paraldehyde.—N. F.

Elixir of paraldehyde varies in strength from 10 to 25 per cent., as prescribed in different localities. The formula here given produces a 25 per cent. elixir, and from this the weaker preparations may readily be made by the addition of aromatic elixir colored with compound tincture of cudbear in the proportion used in the above formula.

To make a 20 per cent. elixir of paraldehyde, for instance, 4 fluidounces of the 25 per cent. elixir are mixed with 1 fluidounce of colored aromatic elixir. To make 5 fluidounces of 15 per cent. elixir, 3 fluidounces of the 25 per cent. elixir are required, and to make the same quantity of 10 per cent. elixir, 2 fluidounces of the above elixir are required.

Elixir of Pareira and Buchu.

Elixir of Pareira and Buchu, Compound.

See Elixir of Buchu and its combinations.

Elixir of Pepsin.

Glycerite of pepsin.....fl.oz. $3\frac{1}{4}$
Glycerinfl.dr. 13
Hydrochloric acidm. 30
Aromatic elixir, to make....fl.oz. 16

Mix, allow to stand several days, if convenient, and filter if necessary.

Each fluidram contains 1 gr. of pepsin.—N. F.

Elixir of Pepsin and Bismuth.

Elixir of Pepsin, Bismuth and Cinchona.

Elixir of Pepsin, Bismuth, Cinchona and Iron.

Elixir of Pepsin, Bismuth, Cinchona, Iron and Strychnine.

Elixir of Pepsin, Bismuth and Iron.

Elixir of Pepsin, Bismuth, Iron and Quinine.

Elixir of Pepsin, Bismuth and Nux Vomica.

Elixir of Pepsin, Bismuth and Quinine.

Elixir of Pepsin, Bismuth, and Strychnine.

Elixir of Pepsin, Bismuth and Wafer Ash.

See Elixir of Bismuth and its combinations.

Elixir of Pepsin and Cinchona.

Elixir of Pepsin, Cinchona and Iron.

Elixir of Pepsin, Cinchona and Strychnine.

See Elixir of Cinchona and its combinations.

Elixir of Pepsin, Compound. (Elixir of Lactated, or Lactinated, or Lacticated Pepsin. — Compound Digestive Elixir.)

I.

Pepsin, soluble scales (1:3000)

.....	gr.	75
Pancreatin, pure	gr.	8
Diastase	gr.	8
Lactic acid	gr.	4
Hydrochloric acid	m.	8
Glycerin	fl.oz.	4
Water	fl.oz.	2
Tincture of cudbear.....	fl.dr.	2
Talcum, purified	gr.	120
Aromatic elixir, to make....	fl.oz.	16

Mix the acids with the water and glycerin, and to this mixture add the pepsin, pancreatin, and diastase, and macerate until solution is apparently effected; then add the tincture and aromatic elixir; thoroughly incorporate the talcum, and filter.—N. F.

The best commercial variety of diastase, capable of converting the largest amount of starch into dextrin and glucose, should be used for this preparation.

It is now known that pepsin, pancreatin and diastase mutually destroy one another when present together in a liquid, in a period of from 3 to 6 weeks, and hence this and similar preparations should either be discontinued entirely or else made in only such quantities as will be quickly consumed.

II.

Pepsin, pure	gr. 80
Pancreatin	gr. 20
Diastase or ptyalin.....	gr. 8
Cudbear, powder	gr. 90
Diluted hydrochloric acid....	f. dr. 1
Lactic acid	drops 5
Spirit of orange.....	f. dr. 2
Alcohol	f. oz. 5
Water	f. oz. 7
Simple syrup	f. oz. 4

Mix all the above except the syrup, macerate for 3 days, agitating frequently; filter, to the filtrate add the syrup, and then through the filter add, if necessary, enough of a mixture of alcohol and water, in the proportion of 5 to 7 by measure, to make the liquid measure 16 fluidounces.

The first formula should be preferred, but the second more nearly conforms to many of the commercial preparations.

Elixir of Pepsin and Iron.

Tincture of iron citrochlorid	f. dr. 9½
Elixir of pepsin, to make....	f. oz. 16
Mix and filter, if necessary.	

Each fluidram represents about ½ gr. of iron (ferric) chlorid and nearly 1 gr. of pepsin.—N. F.

Elixir of Pepsin, Iron and Quinine.

See Elixirs of Iron and combinations.

Elixir of Pepsin and Strychnine.

Strychnine sulfate	gr. 1¼
Distilled water	f. dr. 4
Elixir of pepsin.....	f. oz. 15½

Dissolve the alkaloidal salt in the water by the aid of heat, and add the elixir.

Each fluidram contains 1/100 gr. of strychnine sulfate and nearly 1 gr. of pepsin.

**Elixir of Pepsin and Wafer Ash.
(Elixir Pepsin and Ptelea.)**

Pepsin, pure (1:3000).....	gr. 128
Fluid extract of wafer ash.....	f. oz. 2
Purified talcum	av. oz. ¼
Simple elixir	f. oz. 14

Add the pepsin to the simple elixir, agitate until dissolved, add the remaining ingredients, set aside for 24 hours, and filter.

Each fluidram contains 1 gr. of pepsin and represents 7½ gr. of wafer ash.

Elixir of Phosphorus.

I.

Spirit of phosphorus.....	f. oz. 3½
Oil of anise	m. 15
Glycerin	f. oz. 9
Aromatic elixir, to make....	f. oz. 16

To the spirit, contained in a graduated bottle, add the oil and glycerin, and mix them by repeatedly inverting the bottle until they form a clear liquid. Then add the elixir, in several portions, gently agitating after each addition, until a transparent liquid is obtained.

Keep the product in dark amber-colored, well-stoppered bottles, in a cool and dark place.—U. S. P. 1890 and N. F.

Each fluidram contains about 1/60 gr. of phosphorus.

II.

Compound tincture of phosphorus

phosphorus	f. oz. 1
Glycerin	f. oz. 4

Add the tincture to the glycerin and shake well.

This elixir should be freshly prepared and should be preserved from the light in full bottles.—Brit. Form.

Each fluidram contains 1/30 gr. of phosphorus.

Elixir of Phosphorus, Cinchona and Iron.

See Elixir of Cinchona and its combinations.

Elixir of Phosphorus and Coca.

See Elixir of Coca and its combinations.

**Elixir of Phosphorus, Compound
(Elixir of Phosphorus, Iron, Quinine and Strychnine.)**

Strychnine sulfate	gr. 1¼
Quinine sulfate	gr. 64
Iron phosphate	gr. 128
Tincture of cudbear.....	f. dr. 2
Distilled water, warm....	f. oz. 1
Alcohol	f. oz. 1
Elixir of phosphorus.....	f. oz. 8
Simple elixir, to make....	f. oz. 16

Dissolve the strychnine salt in 4 fluidrams of the water, and the iron salt in the remainder of the water.

Mix the alcohol and elixir of phosphorus, add the two solutions already

prepared, then the quinine salt and the simple elixir, agitate until dissolved, and filter in a well-covered funnel.

Each fluidram contains 1/100 gr. of strychnine sulfate, 1 gr. of iron phosphate, ½ gr. of quinine sulfate, and 1/100 gr. of phosphorus.

Elixir of Phosphorus and Damiana.
Elixir of Phosphorus, Damiana and Iron.

Elixir of Phosphorus, Damiana, Iron and Nux Vomica.

Elixir of Phosphorus, Damiana and Nux Vomica.

Elixir of Phosphorus, Damiana and Strychnine.

See Elixir of Damiana and its combinations.

Elixir of Phosphorus and Gentian.

See Elixir of Gentian and its combinations.

Elixir of Phosphorus and Nux Vomica.

See Elixir of Nux Vomica and its combinations.

Elixir of Phosphorus, Quinine and Strychnine.

Elixir of phosphorus.....f.oz. 8
Quinine hydrochlorid.....gr. 32
Strychnine sulfategr. 1¼
Distilled water, hot.....f.dr. 4
Tincture of cudbear.....f.dr. 2
Simple elixir, to make.....f.oz. 16

Dissolve the quinine salt in 7 fluid-ounces of simple elixir, and the strychnine salt in the water, mix the two solutions, then add the other ingredients, dissolve by agitation, and filter in a well-covered funnel.

Each fluidram contains 1/100 gr. of strychnine sulfate, ¼ gr. of quinine hydrochlorid, and 1/100 gr. of phosphorus.

Elixir of Phosphorus and Strychnine.

Strychnine sulfategr. 1¼
Distilled waterf.dr. 4
Elixir of phosphorus.....f.oz. 8
Tincture of cudbear.....f.dr. 2
Simple elixir, to make.....f.oz. 16

Dissolve the quinine salt in the water and add the remaining ingredients.

Each fluidram contains 1/100 gr. each of phosphorus and strychnine sulfate.

Elixir of Potassium Acetate.

Potassium acetategr. 640
Aromatic elixir, to make...f.oz. 16

Dissolve the potassium acetate in the elixir, and filter, if necessary.

Each fluidram contains 5 gr. of potassium acetate.—N. F.

Elixir of Potassium Acetate, Buchu and Juniper.

Elixir of Potassium Acetate, Buchu, Juniper and Uva Ursi.

See Elixir of Buchu and its combinations.

Elixir of Potassium Acetate and Juniper.

Potassium acetategr. 640
Fluid extract of juniper berriesf.oz. 2
Purified talcgr. 120
Aromatic elixir, to make...f.oz. 16

Triturate the fluid extract with the talc, add 12 fluidounces of aromatic elixir in which the potassium acetate has previously been dissolved; then add enough aromatic elixir to make 16 fluidounces and shake occasionally. Allow to stand for a day or two if convenient, and filter.—N. F.

Each fluidram represents 5 gr. of potassium acetate and 7½ gr. of juniper berries.

Elixir of Potassium Bromid.

See the Elixirs of Bromids.

Elixir of Potassium Iodid.

See Elixir of Iodid of Potassium.

Elixir of Potassium Iodid, Compound.

See Elixir of Iodid of Potassium, Compound.

Elixir Proprietatis. (Tincture Aloes Crocata.)

Aloes, coarse powder.....av.oz. 1
Myrrh, coarse powder.....av.oz. 1
Spanish saffronav.oz. ¼
Alcoholf.oz. 16

Mix, macerate for 8 days, and filter.

In the United States, the official tincture of aloes and myrrh is frequently dispensed for the above preparation.

For elixir proprietatis Paracelsi, see Elixir of Aloes, Acid.

Elixir, Pulmonic. (Pectoral Elixir—Lung Tonic.)

Pure extract of licorice.....	gr. 300
Fluid extract of squill.....	m. 128
Fluid extract of senega.....	m. 128
Fluid extract of henbane leaves	m. 128
Fluid extract of ipecac.....	m. 64
Morphine sulfate.....	gr. 8
Distilled water.....	fl.dr. 4
Tincture of cacao.....	fl.oz. 1
Elixir of cherries, to make.....	fl.oz. 16

Dissolve the morphine salt in the water, add the licorice extract, mix well, add the remaining ingredients, and filter.

Ten fluidrams of glycerite of licorice may be substituted for the extract of licorice.

Each fluidram contains 1/16 gr. of morphine sulfate.

Elixir of Quinine and Ammonium Valerianate.**Elixir of Quinine, Ammonium Valerianate and Cinchonidine.****Elixir of Quinine, Ammonium Valerianate, Cinchonidine and Iron.****Elixir of Quinine, Ammonium Valerianate, Cinchonidine, Iron and Strychnine.****Elixir of Quinine, Ammonium Valerianate, Cinchonidine and Strychnine.****Elixir of Quinine, Ammonium and Strychnine Valerianates.**

See Elixir of Ammonium Valerianate and its combinations.

Elixir of Quinine and Arsenic.**Elixir of Quinine, Arsenic and Iron.**

See Elixir of Arsenic and its combinations.

Elixir of Quinine and Bismuth.**Elixir of Quinine, Bismuth, Iron and Pepsin.****Elixir of Quinine, Bismuth and Pepsin.**

See Elixir of Bismuth and its combinations.

Elixir of Quinine Bisulfate.

Quinine bisulfate.....	gr. 128
Simple elixir	fl.oz. 16

Dissolve by agitation and filter, if necessary.

Each fluidram contains 1 gr. of quinine bisulfate.

Elixir of Quinine and Croton Chloral.

See Elixir of Croton Chloral Hydrate and its combinations.

Elixir of Quinine, Iron and Bismuth.

See Elixirs containing Bismuth.

Elixir of Quinine and Iron Citrate.**Elixir of Quinine, Iron and Pepsin.****Elixir of Quinine, Iron and Strychnine.****Elixir of Quinine and Iron Hypophosphites.****Elixir of Quinine, Iron and Strychnine Hypophosphites.****Elixir of Quinine, Iron Phosphate and Strychnine.****Elixir of Quinine, Iron and Strychnine Phosphates.****Elixir of Quinine and Iron Pyrophosphate.****Elixir of Quinine, Iron Pyrophosphate and Strychnine.**

See Elixir of Iron and its combinations.

Elixir of Quinine, Iron, Phosphorus and Strychnine.

See Elixir of Phosphorus, Compound.

Elixir of Quinine, Iron and Zinc Valerianates.

See Elixirs of the Valerianates.

Elixir of Quinine and Phosphates, Compound.

Quinine sulfategr. 32

Iron phosphate, soluble.....gr. 128

Potassium citrategr. 128

Syrup of calcium lactophosphate fl.oz. 4 |

Water, warm fl.dr. 4 |

Aromatic elixir, to make..... fl.oz. 16 |

Dissolve the quinine sulfate in 10 fluidounces of aromatic elixir, if necessary, with the aid of a gentle heat. Dissolve the iron phosphate and the potassium citrate in the water, and add the solution to that first prepared. Then add the syrup of calcium lactophosphate and lastly the remainder of the elixir; filter, if necessary.—N. F.

Each fluidram contains 3/4 gr. of quinine

nine sulfate, 1 gr. of iron phosphate, and about $\frac{3}{4}$ gr. of so-called calcium lactophosphate.

The above is very similar to Elixir of Cinchona, Iron and Calcium Lactophosphate, which see.

Elixir of Quinine, Phosphorus and Strychnine.

See Elixir of Phosphorus and its combinations.

Elixir of Quinine and Strychnine.

Quinine sulfategr. 64
Strychnine sulfategr. $1\frac{1}{4}$
Simple elixirfl.oz. 16

Dissolve the alkaloidal salts in the elixir by agitation, and filter.

Each fluidram contains $\frac{1}{2}$ gr. of quinine sulfate and 1/100 gr. of strychnine sulfate.

Elixir of Quinine Valerianate.

Quinine valerianategr. 128
Tincture of cudbear.....fl.dr. 2
Simple elixir, to make....fl.oz. 16

Triturate the quinine valerianate with a little of the elixir to a smooth paste. Add about 8 fluidounces more of elixir, triturate until dissolved, add the tincture and the remainder of the elixir.

Each fluidram contains 1 gr. of quinine valerianate.

Elixir of Quinine and Strychnine Valerianates.

Strychnine (alkaloid)gr. $1\frac{1}{4}$
Valerianic acidsufficient
Quinine valerianategr. 128
Tincture of cudbear.....fl.dr. 2
Simple elixir, to make....fl.oz. 16

Triturate the strychnine and quinine valerianate with a little elixir to a smooth paste, add 4 fluidounces of elixir and just enough valerianic acid to dissolve the alkaloids; then add the tincture and the remainder of the elixir, and filter. Should the liquids, before filtration, contain a slight excess of valerianic acid, which would betray itself by its odor, this should be cautiously neutralized by stirring with a glass rod repeatedly dipped into very dilute ammonia water.

Each fluidram contains 1 gr. of qui-

nine valerianate and 1/100 gr. of strychnine valerianate.

Elixir of Quinine Valerianate and Strychnine.

Quinine valerianategr. 128
Strychnine sulfategr. $1\frac{1}{4}$
Compound tincture of cudbearfl.dr. 2
Aromatic elixir, to make...fl.oz. 16

Triturate the quinine valerianate and the strychnine sulfate with about 8 fluidounces of aromatic elixir, until they are dissolved, then add the compound tincture of cudbear and the remainder of the aromatic elixir, and filter, if necessary.—N. F.

Each fluidram contains 1 gr. of quinine valerianate, and 1/100 gr. of strychnine sulfate.

Elixir of Rhubarb.

I.

Sweet tincture of rhubarb...fl.oz. 8
Alcoholfl.oz. 1
Glycerinfl.oz. 2
Simple syrupfl.oz. 2
Waterfl.oz. 3
Mix and filter.

Each fluidram represents about 3 gr. of rhubarb.—N. F.

II.

Rhubarb, No. 12 powder..av.oz. 4
Fennel, bruisedav.oz. 1. gr. 290
Glycerinfl.oz. $2\frac{1}{2}$
Sugarav.oz. $3\frac{1}{4}$
Alcohol, water, each, to makefl.oz. 16

Mix alcohol and water in the proportion of 1 volume of the former to 3 of the latter, moisten the mixed rhubarb and fennel with 12 fluidounces of this mixture, macerate for 48 hours, and express. Break up the marc, add to it enough menstruum to make with the previous pressing 12 fluidounces of clear product. Express again after 24 hours' maceration. Unite the liquids, allow to stand for 2 days, and filter into the mixed glycerin and sugar. Dissolve the sugar by agitation without heat, and if necessary add enough of the same menstruum to make 16 fluidounces of product.—Brit. Form.

Elixir of Rhubarb, Aromatic.

Aromatic fluid extract of
rhubarbfl.oz. 1
Simple elixirfl.oz. 15

This is of the same strength as the aromatic syrup of rhubarb of the U. S. P.

Elixir of Rhubarb and Magnesium Acetate. (Elixir of Rhubarb and Magnesia.)

Magnesia, calcinedgr. 150
Acetic acid, U. S. P. or 36%
.....sufficient
Fluid extract of rhubarb..fl.oz. 2
Aromatic elixir, to make...fl.oz. 16

Dissolve the magnesia in $2\frac{1}{2}$ fluid-ounces of acetic acid, with the aid of a gentle heat, adding, if necessary, a little more acid, drop by drop, until the solution is neutral to test-paper. Then add the fluid extract and the elixir, allow to stand a day or two if convenient, and filter.—N. F.

Each fluidram represents about 4 gr. of magnesium acetate and $7\frac{1}{2}$ gr. of rhubarb.

Elixir of Rhubarb, Magnesia and Senna.

Magnesia, calcinedgr. 144
Acetic acidsufficient
Fluid extract of rhubarb..fl.dr. $8\frac{1}{2}$
Fluid extract of senna....fl.dr. $8\frac{1}{2}$
Aromatic elixir, to make...fl.oz. 16

Dissolve the magnesia in $2\frac{1}{2}$ fluid-ounces of acetic acid with the aid of a gentle heat, adding, if necessary, a little more acetic acid, drop by drop, until the solution is neutral to test-paper; then add the fluid extracts and elixir, and filter.

Each fluidram contains 4 gr. of magnesium acetate and represents 4 gr. each of rhubarb and senna.

Elixir of Rhubarb and Potassium Compound. (Neutralizing Elixir.)

Rhubarbgr. 240
Golden sealgr. 120
Cinnamongr. 120
Potassium bicarbonate.....gr. 240
Spirit of peppermint.....fl.dr. 1
Simple syrupfl.oz. 2
Diluted alcohol, simple elixir,
eachsufficient

Reduce the three drugs to moderately coarse powder, extract them in the usual way by percolation with diluted alcohol until 6 fluidounces of percolate are obtained. In this percolate dissolve the potassium bicarbonate, add the spirit, syrup, and enough elixir to make 16 fluidounces of product, and filter.

This preparation represents the well-known syrup of rhubarb and potassium in the elixir form.

Elixir of Rhubarb and Potassium with Pancreatin.

Rhubarbgr. 320
Golden sealgr. 160
Cinnamongr. 160
Potassium bicarbonate.....gr. 320
Pancreatingr. 32
Spirit of peppermint.....fl.dr. 1
Simple syrupfl.oz. 2
Diluted alcohol, simple elixir,
eachsufficient

Moisten the rhubarb, golden seal and cinnamon (first reduced to a suitable powder), with diluted alcohol, and pack moderately in a percolator; allow to macerate 48 hours and then percolate with diluted alcohol until 6 ounces have been obtained; in the percolate dissolve the potassium bicarbonate and add the pancreatin previously mixed with the syrup, and about 4 fluidounces of elixir; mix thoroughly, add the spirit and enough elixir to make the whole measure 16 fluidounces, and filter.

This is similar to the preceding, containing only pancreatin in addition. Like the preceding also, it may be prepared with fluid extracts.

Elixir of Rhubarb and Senna.

Fluid extract of rhubarb...fl.oz. 2
Fluid extract of senna....fl.oz. 2
Tincture of cacao.....fl.oz. 2
Aromatic elixirfl.oz. 10
Mix and filter, if necessary.

Each fluidram represents $7\frac{1}{2}$ gr. each of senna and rhubarb.

Elixir of Saccharin. (Elixir of Glucose.)

Saccharingr. 384
Sodium bicarbonategr. 192
Alcoholfl.oz. 2
Distilled water, to make...fl.oz. 16

Rub the saccharin and sodium bicarbonate in a mortar with 8 fluidounces of water gradually added; when dissolved, add the alcohol, filter, and wash the filter with the remainder of the water.—Brit. Form.

Twenty minims contain 1 gr. of saccharin.

This preparation is intended as a sweetening agent in place of sugar or syrup.

See also Solution of Saccharin.

Elixir of Salicylic Acid.

Salicylic acidgr. 640
Potassium citrategr. 960
Glycerinfl.oz. 8
Aromatic elixir, to make...fl.oz. 16

Dissolve the potassium citrate in the glycerin with the aid of a gentle heat, add the acid, and continue the heat until it is dissolved; then add the elixir.

This elixir should be freshly made when wanted.—N. F.

Each fluidram contains 5 gr. of salicylic acid.

Elixir of Salicylic Acid, Compound.

See Elixir of Salicylic, Compound.

Elixir of Salicylate of Iron.

Elixir of Salicylate of Iron, Compound.

See combinations of elixirs containing iron.

Elixir of Salicylate of Lithium.

See Elixir of Lithium Salicylate.

Elixir of Salicylates and Manaca.

See Elixir of Manaca, etc.

Elixir of Salicylate of Sodium.

See Elixir of Sodium Salicylate.

Elixir of Salicylate of Sodium, Compound.

See Elixir Sodium Salicylate, Compound.

Elixir of Salol.

Salolgr. 300
Glycerinfl.oz. 4½
Oil of curacao orange.....m. 30
Oil of lemon.....m. 22
Compound tincture of cudbearm. 30
Alcohol (95 per cent.), to makefl.oz. 16

Dissolve the salol and oils in 7¼ fluidounces of the alcohol; mix 2 fluidounces of the alcohol with the tincture and glycerin, and mix this with the salol solution. Then add enough alcohol to make 16 fluidounces, and filter.—Cinc. Acad. Pharm.

It is preferable to use absolute alcohol and dilute it to 95 per cent.

Each fluidram contains nearly 2½ gr. of salol in clear solution.

Elixir Saw Palmetto, Compound.

Fluid extract of saw palmettofl.oz. 2
Fluid extract of sandalwood.....fl.oz. 2
Fluid extract of corn silk.....fl.oz. 4
Simple elixirfl.oz. 8
Mix and filter.

Elixir of Senna.

I.

Deodorized fluid extract of sennafl.oz. 8
Compound tincture of cardamomfl.oz. ½
Simple elixirfl.oz. 7½

II. Brit. Form.:

Alexandria sennaav.oz. 11
Sugarav.oz. 8
Chloroformm. 16
Oil of coriander.....drops 2
Tincture of capsicum.....m. 20
Alcohol, water, diluted alcohol, eachsufficient

Mix 2¾ fluidounces of alcohol with 8¼ fluidounces of water, and with it evenly moisten the senna; pack tightly in a closed vessel, macerate for 3 days, express forcibly, break up the marc, macerate it with enough more of the same kind of menstruum to furnish, in all, 11 fluidounces of liquid, express in 24 hours, mix the two liquids, add the sugar, heat in a closed vessel by means of a water bath to 94 deg. C., maintain at this temperature 10 minutes, allow to cool, strain, add the chloroform, tincture of capsicum, and oil of coriander, first mixed with 2 fluidrams of alcohol, and finally add, if necessary, enough of a mixture of 5 volumes of alcohol and 3 of water to make 16 fluidounces.

Elixir of Senna, Compound.

Fluid extract of senna.....	fl.oz. 2
Purified tamarind pulp.....	av.oz. 4
Oil of coriander.....	drops 12
Alcohol	fl.dr. 2
Simple elixir, to make.....	fl.oz. 16

Dissolve the oil in the alcohol, add to the fluid extract and pulp, then add the elixir.

This is similar to confection of senna.

Elixir of Senna, Magnesia and Rhubarb.**Elixir of Senna and Rhubarb.**

See Elixir of Rhubarb and its combinations.

Elixir, Simple.

By simple elixir is commonly understood a flavored and sweetened dilute alcohol, intended as a vehicle for medicinal remedies, the flavoring agent being a volatile oil or combination of oils. The term may, however, include all such elixirs as are employed as vehicles, although these may be something more than a flavored and sweetened dilute alcohol.

If the second definition holds good, then the following elixirs, which have already been mentioned, will come under the head of simple elixirs: Elixir of orange, elixir of cherries, aromatic elixir, compound elixir of taraxacum, elixir de Garus, elixir of anise and adjuvant elixir.

Whenever simple elixir is mentioned, as an ingredient of a preparation in this formulary, some one of the elixirs that are prepared by simply flavoring and sweetening dilute alcohol should be selected, using such a one as will best disguise the taste of the medicament; at times it will, of course, be found necessary or advantageous to employ one of the others, like compound elixir of taraxacum, elixir of cherries, etc. In case there be no preference whatever, the aromatic elixir of the U. S. P. should be used.

It is suggested that a finer product will always be obtained by using deodorized alcohol instead of ordinary al-

cohol; also that no volatile oil be used which is not only perfectly pure, but also perfectly fresh. The favorite predominant odor of simple elixir is that of orange peel.

Formulas for making simple elixir other than the preceding are the following:

I. Diehl's formula:

Oil of orange peel.....	m. 30
Oil of cinnamon.....	drops 5
Oil of anise.....	drops 2
Oil of bitter almond.....	drop 1
Tincture of cardamom....	fl.dr. 5
Alcohol	fl.oz. 16
Water	fl.oz. 36
Sugar	av.oz. 24
Cocoa (Baker's)	gr. 240
Magnesium carbonate ...	av.oz. 1

Mix the oils, tincture and alcohol, and triturate with the cocoa and magnesium carbonate, having first mixed the latter intimately; transfer the mixture to a bottle, add the water gradually, agitate occasionally for several hours, filter, express the filter between muslin, filter the expressed liquid, mix the two filtrates, in the liquid dissolve the sugar by agitation, and filter or strain as may be necessary.

II. Schultz's formula:

Oil of orange peel (fresh)...	m. 48
Oil of lemon.....	drops 12
Oil of coriander.....	drops 3
Tincture of vanilla	fl.oz. 1
Tincture of cardamom....	fl.oz. 1
Powdered chocolate (Baker's)	gr. 480
Alcohol	fl.oz. 16
Simple syrup	fl.oz. 24
Water (filtered through charcoal), to make.....	fl.oz. 64

Dissolve the oils in 4 fluidounces of alcohol, add 12 fluidounces water and the remainder of the alcohol, and shake well. Dissolve the chocolate in 3 fluidounces of hot water, add the syrup, shake well, add the tinctures of cardamom and vanilla, and enough water to make 64 fluidounces. Filter through paper, on which about $\frac{1}{2}$ av.ounce of talcum has been distributed; return the first part until the filtrate is clear.

III. Schmidt's formula:

Oil of sweet orange.....	fl.oz. 2
Oil of caraway.....	drops 20
Spirit of cinnamon.....	drops 32
Alcohol	fl.oz. 14½
Simple syrup	fl.oz. 36
Glycerin	fl.oz. 8
Distilled water	fl.oz. 4
Calcium phosphate	av.oz. 1½

Mix the oils and alcohol, add the calcium phosphate, shake well, add the other ingredients, shake again, and filter.

IV. Kimball's formula:

Oil of orange peel.....	fl.dr. 2¼
Oil of Ceylon cinnamon....	drops 3
Oil of anise.....	drops 3
Oil of caraway.....	drops 6
Tincture of vanilla.....	fl.dr. 9
Sherry wine	fl.oz. 3
Alcohol	fl.oz. 12½
Water	fl.oz. 23
Simple syrup	fl.oz. 26
Purified talcum	av.oz. 1

Mix the oils with the talcum; mix the alcohol, wine and water, add to the mixture of talcum and oils, then add the vanilla and the syrup; let stand one hour, shaking often, and filter.

V. Schnackenberg's formula:

Soluble saccharin	gr. 24
Oil of anise.....	m. 160
Alcohol	fl.oz. 16
Distilled water, to make..	fl.oz. 64

Dissolve the saccharin in 40 fluid-ounces of water, add the oil of anise, previously dissolved in 16 fluidounces of alcohol, and the remainder of the water. Add 1 av.ounce of purified talcum; let stand 24 hours, occasionally shaking, and filter.

VI.

Cinnamon water	fl.oz. 24
Simple syrup	fl.oz. 24
Alcohol	fl.oz. 16
Spirit of orange.....	fl.oz. 2

This may be clarified by shaking with paper pulp or purified talcum, and filtering. The pulp can be made by beating ½ av.ounce filter paper in a mortar with sufficient water just to moisten it.

If distilled cinnamon water be used, it makes a fine elixir. If distilled cinnamon water cannot be had, the water

should be made with oil of Ceylon cinnamon.

This is similar to the next formula.

VII. Brit. Form.:

Oil of bitter orange.....	m. 96
Alcohol	fl.oz. 19
Cinnamon water, distilled..	fl.oz. 22½
Simple syrup	fl.oz. 22½

Dissolve the oil in the alcohol, add the other ingredients, filter through paper moistened with diluted alcohol, and well sprinkled with kaolin, returning the first portions of filtrate until it passes through bright.

See also formula immediately preceding.

VIII. McIntyre's formula:

Oil of orange peel.....	fl.dr. 1
Oil of Ceylon cinnamon....	drops 20
Alcohol	fl.oz. 12
Simple syrup	fl.oz. 25
Distilled water	fl.oz. 27

Dissolve the oils in the alcohol, add the syrup to this solution until a milkiness or slight precipitation of oil is produced, then pour the mixture into the remaining syrup, constantly stirring during the whole process, and filter, using paper pulp or purified talcum, if necessary, to clarify.

IX. Biroth's formula:

Orange flower water.....	fl.oz. 32
Bitter almond water.....	fl.oz. 8
Simple syrup	fl.oz. 8
Glycerin	fl.oz. 8
Alcohol	fl.oz. 8

Mix all and filter through purified talcum.

X.

Ceylon cinnamon	gr. 90
Coriander	gr. 90
Caraway	gr. 90
Star-anise	gr. 60
Nutmeg	gr. 30
Oil of sweet orange peel....	m. 30
Diluted alcohol	sufficient
Simple syrup	fl.oz. 32

Percolate the aromatics, previously reduced to coarse powder, with diluted alcohol previously mixed with the oil of orange, continuing the percolation until 32 fluidounces of aromatic tincture are obtained, and mix with the syrup, filtering through talcum, if necessary.

XI.

Oil of sweet orange peel.....	fl.dr.	2
Oil of caraway.....	fl.dr.	1
Oil of coriander.....	m.	40
Oil of cassia.....	m.	40
Alcohol.....	fl.oz.	16
Water.....	fl.oz.	36
Sugar.....	av.oz.	18
Purified talcum.....	av.oz.	1

Mix the oils with the alcohol, add the water and sugar, shake till latter is dissolved, add the talcum, shake again, and filter.

XII.

Oil of orange peel.....	m.	70
Alcohol.....	fl.oz.	28
Purified talcum.....	gr.	120
Orange flower water.....	fl.oz.	18
Simple syrup.....	fl.oz.	18

Mix the oil and alcohol, add the talcum, shake well, add the other ingredients, shake again, and filter.

XIII.

Tincture of fresh orange peel.....	fl.oz.	12
Tincture of fresh lemon peel.....	fl.oz.	4
Alcohol.....	fl.oz.	8
Orange flower water.....	fl.oz.	8
Purified talcum.....	av.oz.	2
Simple syrup.....	fl.oz.	32

Mix the whole well and filter.

The tincture of fresh lemon peel is to be prepared like the tincture of orange peel, U. S. P.

This and the preceding have been known as elixir of orange.

XIV.

Bitter orange peel.....	av.oz.	1
Clove.....	gr.	40
Canella.....	gr.	40
Cinnamon water.....	fl.oz.	24
Orange flower water.....	fl.oz.	16
Holland gin.....	fl.oz.	14
Sugar.....	av.oz.	18

This is an old formula, quite different from any of the preceding. It is not recommended.

Elixir of Six Bromids.

See Elixirs of the Bromids.

Elixir of Six Iodids.

See Elixir of the Iodids.

Elixir of Sodium Bromid.

See Elixirs of the Bromids.

Elixir of Sodium Bromid and Lupulin.

See Elixir of Lupulin and its combinations.

Elixir of Sodium Hypophosphite.

See Elixir of Hypophosphite of Sodium.

Other elixirs containing sodium hypophosphite may be found with Elixir of Calcium Hypophosphite and its combinations, and with Elixirs of the Hypophosphites.

Elixir of Sodium Hypophosphite.

See Elixir of Hypophosphite of Sodium.

Elixir of Sodium Salicylate.

Sodium salicylate.....gr. 640

Aromatic elixir, to make...fl.oz. 16

Dissolve the sodium salicylate in elixir, by agitation, and filter, if necessary.

This elixir should be freshly prepared when required for use.—N. F.

Each fluidram contains 5 gr. of sodium salicylate.

Elixir of Sodium Salicylate, Compound.

Salicylic acid.....gr. 300

Sodium bicarbonate.....gr. 225

Fluid extract of black cohosh.....

.....fl.dr. 2

Tincture of gelsemium.....m. 30

Potassium iodid.....gr. 90

Oil of wintergreen.....drops 4

Adjuvant elixir.....fl.oz. 8

Simple syrup.....fl.oz. 3¼

Distilled water, to make...fl.oz. 16

Dissolve the acid and sodium bicarbonate together in 3½ fluidounces of water. Mix the other ingredients with the elixir, add the sodium salicylate solution, shake well and filter.—Cinc. Acad. Pharm.

The salicylic acid made from natural oil of wintergreen is preferable for this preparation.

Keep in a cool, dark place.

Elixir of Stillingia, Compound.

I.

Comp. fl. ext. of stillingia...fl.oz. 4

Aromatic elixir.....fl.oz. 12

Mix them, allow the mixture to stand

a few days, or longer, if convenient, and filter.—N. F.

Each fluidram represents 15 m. of compound fluid extract of stillingia.

II. It may be prepared directly from the drugs as follows:

Stillingia	av.oz. 1
Turkey corn	av.oz. 1
Blue flag	av.oz. $\frac{1}{2}$
Elder flowers	av.oz. $\frac{1}{2}$
Pipsissewa	av.oz. $\frac{1}{2}$
Coriander	av.oz. $\frac{1}{4}$
Prickly ash berries.....	av.oz. $\frac{1}{4}$
Aromatic elixir	sufficient

Mix the drugs, reduce to moderately coarse powder, moisten thoroughly with the elixir, let stand for several hours or over night, pack in a percolator, and pass elixir through it until 16 fluid-ounces of product have been obtained.

Elixir of Strychnine Valerianate.

Strychnine valerianate	gr. $1\frac{1}{4}$
Acetic acid	sufficient
Tincture of vanilla.....	fl.dr. 2
Comp. tincture of cudbear..	fl.dr. 2
Aromatic elixir, to make....	fl.oz. 16

Triturate the strychnine valerianate with about 1 fluidounce of aromatic elixir, gradually added, and effect complete solution by the addition of 1 or more drops of acetic acid, avoiding an excess. Then add the tinctures, and lastly, the remainder of the aromatic elixir. Filter, if necessary.—N. F.

Each fluidram contains 1/100 gr. of strychnine valerianate.

Elixir of Sumbul. (Elixir of Musk Root.)

Fluid extract of sumbul....	fl.oz. $2\frac{1}{2}$
Alcohol	fl.oz. 1
Adjuvant elixir	fl.oz. $12\frac{1}{2}$
Purified talcum	av.oz. $\frac{1}{2}$

Triturate the fluid extract with the talcum, and the alcohol and elixir, and filter.

Each fluidram represents about 10 gr. of sumbul.

Elixir of Sumbul and Ammonium Valerianate.

See Elixir of Ammonium Valerianate and its combinations.

By way of comparison, see also No. II of the formulas immediately following.

Elixir of Sumbul, Compound.

I.

Fluid extract of sumbul....	fl.oz. 2
Fluid extract of scullcap....	fl.oz. 1
Fluid extract of valerian....	fl.dr. 2
Alcohol	fl.oz. 1
Adjuvant elixir, to make....	fl.oz. 16
Purified talcum	av.oz. $\frac{1}{2}$

Mix the fluid extracts and alcohol, add the talcum, shake well, then add the elixir, shake again, and filter.

Each fluidram represents $7\frac{1}{2}$ gr. of sumbul, about 2 gr. of scullcap, and about $\frac{1}{2}$ gr. of valerian.

II.

Fluid extract of sumbul....	fl.oz. 2
Alcohol	fl.oz. 1
Elixir of ammonium valeri-	
anate	fl.oz. 8
Simple elixir	fl.oz. 5

Mix the fluid extract and alcohol, add the two elixirs, and filter through talcum.

Each fluidram contains 1 gr. of ammonium valerianate and represents $7\frac{1}{2}$ gr. of sumbul.

These two mixtures are quite dissimilar, but both are dispensed under the name "compound elixir of sumbul."

Elixir of Tar with Calcium and Sodium Hypophosphites.

See Elixir of Calcium Hypophosphite and its combinations.

Elixir of Tar, Compound.

Syrup of wild cherry.....	fl.oz. 3
Syrup of tolu.....	fl.oz. 3
Morphine sulfate	gr. $2\frac{1}{2}$
Alcohol	fl.dr. 6
Distilled water, hot.....	m. 75
Wine of tar, to make.....	fl.oz. 16

Dissolve the morphine sulfate in the water, add the syrups and alcohol and the wine of tar; allow to stand a day or two, if convenient, and filter if necessary.—N. F.

Each fluidram contains about 1/50 gr. of morphine sulfate.

Elixir of Taraxacum, Compound.

I.

Fluid extract of dandelion....	m. 256
Tincture of sweet orange	
peel	fl.oz. 1
Fluid extract of wild cherry..	m. 150

Fluid extract of licorice root	fl.oz.	1
Tincture of cinnamon....	fl.dr.	4
Compound tincture of cardamom	fl.dr.	4
Aromatic elixir, to make....	fl.oz.	16
Mix, let stand a few days, and filter.		

If a precipitate subsequently makes its appearance, it should be removed by filtration.—N. F. (revised edition).

This elixir is intended chiefly as a vehicle or corrigent, to cover the bitter taste of quinine and similar substances.

II.

Dandelion	gr.	320
Wild cherry	gr.	320
Sweet orange peel, recently dried	gr.	320
Licorice, Russian, peeled....	av.oz.	2¼
Cinnamon, Saigon	gr.	80
Cardamom	gr.	80
Canada snake root.....	gr.	80
Caraway	gr.	80
Clove	gr.	27
Simple syrup	fl.oz.	21
Alcohol, water, each.....	sufficient	

Mix the drugs, reduce them to a moderately coarse powder, and extract by percolation with a mixture of 1 volume of alcohol and 2 of water, so as to obtain 11 fluidounces of percolate; to this add the syrup; let stand a few days, if possible, and filter.—N. F. (1st edition).

III. A formula for a preparation of the same name, which is also much in use and which is different in some respects from either of the preceding, is the following:

Fluid extract of dandelion....	fl.dr.	5
Fluid extract of wild cherry....	fl.dr.	3
Fluid extract of gentian....	fl.dr.	1
Fluid extract of licorice root		
.....	fl.dr.	1
Simple elixir, to make.....	fl.oz.	16
Mix and filter.		

Elixir of Terpin Hydrate.

I.

Terpin hydrate, fine powder....	gr.	128
Tincture of sweet orange peel	m.	75
Solution of saccharin.....	m.	8
Alcohol	fl.oz.	6½
Glycerin	fl.oz.	6½
Simple syrup, to make....	fl.oz.	16
Dissolve the terpin hydrate in the al-		

cohol, add the tincture, solution, glycerin and syrup. Mix well and filter, if necessary.—N. F.

Each fluidram contains 1 gr. of terpin hydrate.

II. Vigier's formula:

Terpin, hydrate	gr.	60
Tincture of vanilla.....	fl.dr.	1
Alcohol	fl.oz.	2
Glycerin	fl.oz.	2
Honey	fl.oz.	2

Elixir of Terpin Hydrate and Codeine.

Codeine	gr.	16
Elixir of terpin hydrate....	fl.oz.	16

Dissolve the codeine in the elixir by trituration.—N. F.

Each fluidram contains 1 gr. of terpin hydrate and ⅛ gr. of codeine.

Elixir of Terpin Hydrate with Heroin.

Heroin	gr.	5½
Elixir of terpin hydrate....	fl.oz.	16

Dissolve the heroin in the elixir.—N. F.

Each fluidram contains 1 gr. of terpin hydrate and 1/24 gr. of heroin.

Elixir of Turkey Corn, Compound.

See Elixir of Corydalis, Compound.

Elixirs Containing Valerianate of Ammonium.

All elixirs containing valerianate of ammonium may be found under the head of Elixir of Ammonium Valerianate.

Elixir of Valerianate of Iron.

See Elixir of Iron combinations.

Elixir of Valerianates of Iron, Quinine and Zinc.—(Elixir of Three or Triple Valerianates.)

Iron valerianate	gr.	64
Quinine valerianate	gr.	64
Zinc valerianate	gr.	64
Tincture of cudbear.....	fl.dr.	2
Valerianic acid	sufficient	
Simple elixir, to make.....	fl.oz.	16

Triturate the three valerianates with 8 fluidounces of elixir to a smooth paste, add, if necessary, a very small amount of the acid, just enough to dissolve the salts, then add the tincture and the remainder of the elixir, and filter.

If too much valerianic acid has been

added so that it is betrayed by its odor, it should be exactly neutralized by stirring with a glass rod repeatedly dipped in dilute ammonia water.

Each fluidram contains $\frac{1}{2}$ gr. each of the valerianates of iron, quinine and zinc.

Elixir of Valerianate of Morphine.

See Elixirs of Morphine combinations.

Elixir of Valerianate of Quinine.

Elixir of Valerianate of Quinine and Strychnine.

See Elixir of Quinine and its combinations.

See Elixir of Valerianate of Strychnine.

Elixir of Valerianate of Zinc.

Zinc valerianategr. 128

Stronger solution of ammonium citratefl.dr. 12

Alcoholfl.oz. 2

Spirit of bitter almond.....m. 75

Compound tincture of cudbearfl.dr. 2

Aromatic elixir, to make...fl.oz. 16

Mix the stronger solution of ammonium citrate with 4 fluidounces of aromatic elixir and the alcohol, and triturate the zinc valerianate with this mixture, added gradually and in portions, until solution has been effected. Then add the spirit, tincture, and the remainder of the aromatic elixir. Allow the mixture to stand a few days, and filter.—N. F.

Each fluidram contains 1 gr. of zinc valerianate.

Elixir of Wafer Ash. (Elixir of Ptelea.)

Fluid extract of wafer ash...fl.oz. $2\frac{3}{4}$
Simple elixir, to make.....fl.oz. 16

Mix, and allow to stand for about 24 hours, then filter through purified talcum.

Each fluidram represents 10 gr. of wafer ash.

Elixir of Wafer Ash, Bismuth and Pepsin.

See Elixir of Bismuth and its combinations.

Elixir of Wafer Ash and Pepsin.

See Elixir of Pepsin and its combinations.

Elixir of Wahoo. (Elixir of Euonymus.)

Fluid extract of wahoo.....fl.oz. $2\frac{1}{2}$

Waterfl.oz. 2

Syrup of coffee.....fl.oz. 2

Compound elixir of taraxacumfl.oz. $9\frac{1}{2}$

Mix them, let the mixture stand 48 hours, if convenient, and filter.—N. F.

Each fluidram represents about $9\frac{1}{2}$ gr. of wahoo.

Elixir of Wahoo and Blue Flag.

See Elixir of Blue Flag and its combinations.

Elixir of White Pine, Compound.

Fluid extract of white pine

barkfl.oz. 1

Fluid extract of wild cherry

barkfl.oz. 1

Fluid extract of balsam gilead budsfl.dr. 1

Fluid extract of spikenard...fl.dr. 1

Fluid extract of bloodroot...fl.dr. 1

Fluid extract of sassafras...m. 30

Morphine acetategr. 3

Chloroformm. 64

Alcoholfl.oz. 7

Waterfl.oz. 4

Simple syrupfl.oz. 3

Mix the fluid extracts with the alcohol, water and syrup previously mixed, and filter through purified talcum until clear; add the chloroform and dissolve morphine salt in the mixture.

The above represents the now well-known "white pine cough syrup" in elixir form.

Elixir of Wild Cherry.

Fluid extract of wild cherry...fl.oz. 4

Alcoholfl.oz. 1

Simple elixirfl.oz. 11

Mix, allow to stand for 24 hours, and filter through purified talcum

Each fluidram represents 15 gr. of wild cherry.

Elixir of Wild Cherry and Iron.

See Elixir of Iron and its combinations.

Elixir of Yerba Santa. (Elixir of Eriodictyon.)

Fluid extract of yerba santa	fl.oz. 2
Pumice stone, powder....av.oz.	1
Magnesium carbonate	gr. 160
Alcohol	fl.oz. 1
Simple elixir, to make....fl.oz.	16

Triturate the fluid extract with the pumice and magnesium carbonate until well mixed, add the alcohol, mix again, then add 13 fluidounces of elixir, mix once more, let the whole stand for several hours, stirring occasionally, then filter, returning the first portions of filtrate to the filter until the liquid is clear, and finally adding enough simple elixir through the filter until the filtrate measures the requisite amount.

Each fluidram represents $7\frac{1}{2}$ gr. of yerba santa.

Elixir of Yerba Santa, Aromatic. (Elixir Corrigens.)

I.

Fluid extract of yerba santa	fl.oz. 1
Simple syrup	fl.oz. 8
Pumice, fine powder and washed	gr. 240
Magnesium carbonate	gr. 75
Compound elixir of taraxacum, to make.....fl.oz.	16

Mix 7 fluidounces of the elixir with the syrup and pumice, then add the fluid extract, and mix the whole thoroughly by agitation. Shake the mixture occasionally during 2 hours, then allow it to settle, and carefully decant the liquid into a funnel, the neck of which contains a small pellet of absorbent cotton. Afterwards add the dregs and allow them to drain. To the filtrate add the magnesium carbonate, and shake occasionally during several hours. Let the mixture stand at rest during 12 hours, if convenient, then decant the liquid and filter it through paper. To the filtrate add enough compound elixir of taraxacum, if necessary, to make 16 fluidounces.—N. F.

This preparation is chiefly intended as a vehicle for quinine and other bitter remedies.

II. Edel's formula modified:

Yerba santa, coarse powder..gr.	360
Sweet orange peel, recently dried and in coarse powder..gr.	120
Oil of clove	drops 4
Oil of cinnamon	drops 4
Oil of caraway.....	drops 2
Oil of coriander.....	drop 1
Comp. tinct. of cardamom..fl.dr.	1
Sugar	av.oz. 7
Glycerin, water, alcohol, solution of potassa, each..	sufficient

Mix the oils and tincture with the drugs and extract by percolation in the usual way, employing as a menstruum a mixture of 1 part of alcohol, 1 of glycerin, and 3 of water, all by measure, with 1 per cent. of liquor potassa. 12 fluidounces of percolate are to be obtained, which is to be returned to the percolator if not clear; to this add the sugar and dissolve by agitation.

III.

Yerba santa	av.oz. 1
Sweet orange peel.....	gr. 144
Cardamom (without capsule)gr.	28
Clove	gr. 28
Cinnamon	gr. 28
Anise	gr. 20
Coriander	gr. 20
Caraway	gr. 20
Red saunders	gr. 10
Sugar	av.oz. 7
Alcohol, glycerin, water, each	sufficient

Mix the drugs, reduce to moderately coarse powder, extract by percolation with a menstruum composed of 1 part of alcohol, 1 of glycerin, and 3 of water, all by measure, until 12 fluidounces of percolate are obtained; in the latter, dissolve the sugar by agitation, and filter.

Elixir of Yerba Santa, Compound.

Fluid extract of yerba santa..fl.oz.	1
Fluid extract of grindelia..fl.oz.	1
Alcohol	fl.oz. 1
Pumice stone, powder....av.oz.	1
Simple elixir, to make....fl.oz.	16

Mix the fluid extracts, triturate with pumice stone, add 13 fluidounces of simple elixir, mix again, allow the whole to stand for several hours, stirring occasionally, and filter.

Each fluidram represents nearly 4 gr. each of yerba santa and grindelia.

Elixir of Zinc Bromid.

See Elixirs of the Bromids.

Elixir of Zinc, Iron and Quinine Valerianate.**Elixir of Zinc Valerianate.**

See the elixirs of the valerianates.

Emulsions and Emulsifiers.

The N. F. states that the successful formation of emulsions, whether of fixed or volatile oils, is most satisfactorily and expeditiously accomplished with powdered acacia as the emulsifying agent. Hence, preference is given acacia, though other emulsifying agents are not ignored.

When acacia is used as the emulsifying agent of fixed oils, it is important that the oil, the acacia and the water shall primarily be in absolutely definite proportion to each other by weight. This proportion is 8 parts of oil, 2 parts of acacia, and 3 parts of water. The oil and acacia, the latter in fine powder, are weighed into a mortar, and well mixed by trituration; the water is then added in one portion, and the whole is triturated briskly until a thick, creamy emulsion is produced, the sides of the mortar being carefully scraped, and the mixture again triturated so as to insure the complete emulsification of all the oil. During warm weather, the water and oil should be cooled. The other ingredients may then be gradually added; first the flavoring, then the greater part of the water necessary to make the final quantity, then the syrup, etc. Finally the quantity is adjusted by the addition of sufficient water.

Alcoholic liquids should be added last and should be previously mixed with a portion of the water.

If these simple conditions and directions are carefully observed, and particularly if the proportions by weight are accurate, a perfect emulsion is obtained with certainty and rapidity.

In making emulsions of volatile oils, the use of tragacanth, or of tragacanth and acacia mixed, is more satisfactory

than acacia alone, despite the above statement of the N. F. Even in making emulsions of fixed oils it is desirable to add a small amount of powdered tragacanth; this gives more "body" to the emulsion and, if used in proper proportion, the emulsion will not separate in the least. Large manufacturers of cod-liver oil emulsions habitually use a mixture of acacia and tragacanth as the emulsifier. A mixture of Irish moss mucilage and acacia is also a favorite. Less acacia is required if tragacanth or Irish moss mucilage be employed in connection with it.

With other emulsifying agents—mucilage of Irish moss, mucilage of dextrin, glycerite of yolk egg (glyconin), tincture of soap bark—the proportions need not be adjusted with the same minuteness. It suffices to place the emulsifier into a bottle or mortar, and to add the oil in small portions at a time, shaking or triturating briskly after each addition until emulsification is completed. Obviously the preparation of this class of emulsions is very much facilitated by mechanical contrivances that are capable of producing brisk agitation and mingling of the two fluids, and such are necessarily resorted to when emulsions are to be made in large quantities for the market.

The above-mentioned emulsifiers do not, by any means, include all those known, nor even all those commonly accepted. Extract of malt is an excellent emulsifier for fixed oils, and formulas for combinations of malt extract with cod liver oil will be found under Extract of Malt, which see.

Powdered gum tragacanth may also be used as an emulsifier but while it is fairly satisfactory for volatile oils, it alone is scarcely efficient for fixed oils. Besides the quality of available powdered tragacanth is exceedingly variable. This latter statement also applies to powdered acacia of which only the very best quality should be employed.

Saccharated casein is an excellent

emulsifier of fixed oils. It is prepared by heating any suitable quantity of cow's milk, say, one gallon, to 40 deg. C., adding 2 fluidounces of 10 p. c. ammonia water, or somewhat more if the ammonia water be weaker, and setting aside in a separatory funnel for 24 hours. Then draw off the lower limpid layer, the so-called "lactoserum," from the upper layer of partially saponified cream or fat. To this lactoserum add acetic acid until no further precipitation occurs. Wash the precipitate repeatedly with water at a temperature of 35 to 40 deg. C. until the water is no longer acid. Then collect the precipitate on a muslin strainer and press it to remove excess of water. In the resulting cake, determine the proportion of actual casein by drying a small weighed portion in a drying oven at 110 deg. C. Now triturate the moist cake of casein with 4 av. ounces of powdered sugar until well mixed, and then incorporate 8 parts of sodium bicarbonate for every 100 parts of casein calculated as dry. Under the influence of prolonged trituration, in the presence of the sodium bicarbonate, the casein swells up and becomes thinner, translucent, and soluble in water. On no account must the bicarbonate be added directly to the casein as a tough, unmanageable mass would result. Add more powdered sugar until there are 9 parts by weight of powdered sugar for every 1 part of casein calculated as dry. A mixture of about the consistence of lozenge paste is formed, which should be divided into small fragments, well dried at a temperature of 25 to 30 deg. C., powdered fine, and enough powdered sugar added, if necessary, to make the whole weigh 10 times as much as the weight of the casein in the original moist mass calculated as dry.

Still other emulsifying agents are condensed milk, gelatin, egg yolk, mucilages of acacia and linseed, etc. Sometimes it is of advantage to combine two

emulsifier is saponin, the active principle soap bark and soapwort.

Finally, there are also a number of proprietary emulsifiers on the market which are in powder form. The advantages claimed for these are that the emulsion may be produced by agitation in a bottle, that the emulsion is permanent, and that only a small quantity of the emulsifier is required (in some cases 4 drams is sufficient to make one pint of emulsion which may contain as much as 50 per cent. of oil).

The following mixtures will equal the above referred-to proprietary emulsifiers:

I. Equal parts of acacia, tragacanth, sugar and corn starch, all to be in fine powder, and the gums to be of the best quality. Mix well.

II.

Saccharin	parts 3
Saponin	parts 13
Tragacanth powder.....	parts 200

Mix well.

III.

Gelatin, No. 80 powder.....	part 1
Tragacanth, powder.....	part 1
Sugar, powder.....	parts 2

Mix well.

For typical formulas for emulsions of fixed oils, see the emulsions of cod-liver oil, and for typical formulas for emulsions of volatile oils, see emulsions of turpentine oil. For methods of emulsifying other substances, such as chloroform, camphor, etc., see the formulas for emulsions which follow.

The above hints and suggestions refer only to emulsions made with an added emulsifier. Emulsions may also be made of substances which contain not only the oil or resin to be emulsified, but also the emulsifying agent. Examples of such substances are gum-resins and seeds. See Emulsion of Ammoniac and of Asafetida for examples of gum-resin emulsions and manner of making the same; and see Emulsion of Almond and of Pumpkin Seed for examples of seed emulsions

and manner of making the same. The German and Austrian pharmacopeias direct that when no directions are given for making a seed emulsion, the product should represent 10 p. c. by weight of seed (equivalent to 1 pint of emulsion from $1\frac{3}{4}$ av. ounces of seed).

All emulsions may be flavored with volatile oils, flavoring syrups, or otherwise. This will be explained in detail under Emulsion of Cod-Liver Oil, which see.

All emulsions should be shaken before use.

Emulsion of Almond. (Almond Mixture U. S. P. 1880. — Simple Emulsion.—Milk of Almond.—Almond Milk.—Emulsum Amygdalæ.—Emulsio Simplex.—Emulsio Amygdalarum Saccharata.)

I.

Sweet almond	av.oz.	1
Acacia, fine powder.....	gr.	75
Sugar	av.oz.	$\frac{1}{2}$
Water, to make.....	fl.oz.	16

Having blanched the almonds with hot water, add the acacia and sugar, and beat in a mortar until well mixed. Then rub this with $14\frac{1}{2}$ fluidounces of water, at first very gradually added, until a uniform mixture results. Strain this and wash the mortar and strainer with enough water to make the colature measure 16 fluidounces.

The first portions of water should be added very slowly, making a uniform paste before adding more water.

This preparation should be freshly made when wanted for use.—U. S. P.

II.

Sweet almond.....	gr.	365
Sugar	gr.	365
Distilled water.....	fl.oz.	16

Blanch almonds in the usual way, triturate with a little sugar, then with a little water gradually added, then slowly add the remainder of the water, mix well, strain with expression, and in the colature dissolve the remainder of the sugar.—Codex.

III.

Sweet almond.....	av.oz.	$1\frac{3}{4}$
Sugar	av.oz.	$1\frac{3}{4}$
Distilled water.....	sufficient	

From the almond prepare an emulsion in the usual manner, so as to obtain 15 fluidounces of emulsion, and in this dissolve the sugar by agitation.—Germ. Form.

IV.

Sweet almond, blanched..	av.oz.	$1\frac{3}{4}$
Sugar	av.oz.	1
Water.....	enough to make	fl.oz. 16

Triturate the almond with the sugar and prepare an emulsion in the usual manner.—Austr. Pharm.

V. Brit. Pharm.—Same as Mixture, Almond, which see.

VI. The following is also called "emulsion of almond," but is also known as "look album," "white linctus," or "white drink":

Sweet almond.....	av.oz.	$3\frac{1}{4}$
Bitter almond.....	gr.	90
Sugar, granulated.....	av.oz.	$3\frac{1}{4}$
Tragacanth, fine powder....	gr.	24
Orange flower water.....	fl.dr.	9
Distilled water.....	fl.oz.	12

Make an emulsion with the almonds, 4 fluidounces of water, and nearly the whole of the sugar, and strain. Triturate the tragacanth with the rest of sugar, then add small portion of the emulsion, and triturate briskly and for a long time, until well mixed; then add the remainder of the emulsion in small portions, while continuing the trituration, and finally add the orange flower water.

Emulsion of Almond Oil. (Oil Emulsion.—Emulsio Oleosa.—Simple Emulsion.)

Sweet almond oil.....	fl.oz.	$1\frac{3}{4}$
Gum arabic, powder.....	gr.	365
Distilled water.....	fl.oz.	$13\frac{1}{2}$

Triturate oil with gum until well mixed, emulsify with $1\frac{1}{2}$ fluidounces of water, and then gradually incorporate the balance of the water.

This contains about 10 per cent. of oil.—Germ. Pharm.

Emulsion of Almond, Compound.
(Compound Almond Milk.)

Sweet almond, blanched...av.oz. 1½
Henbane seed.....gr. 130
Calcined magnesia.....gr. 130
Sugar, powder.....av.oz. 1½
Bitter almond water.....fl.dr. 6
Waterfl.oz. 13½

From the sweet almond and henbane seeds, prepare an emulsion with the water, strain, add the matter almond water, mix the magnesia and sugar with this emulsion, and shake until the sugar is dissolved.—Germ. Form.

Emulsion of Ammoniac. (Mixture of Ammoniac, U. S. P. 1880.—Milk of Ammoniac.—Lac Ammoniac.)

Gum ammoniacgr. 300
Water.....to make fl.oz. 16

Rub the gum in a mortar with 14½ fluidounces of water, at first very gradually added, until a uniform emulsion results. Then strain the mixture and wash the mortar and strainer with enough water to make the product measure 16 fluidounces.

This should be made freshly when wanted for use.

This contains about 4 per cent. of ammoniac.—N. F. Appendix and U. S. P. 1890.

The mixture of ammoniac of the Brit. Pharm. is made from 225 grains of ammoniac, 1 fluidounce of syrup of tolu and 15 fluidounces of distilled water.

Emulsion of Asafetida. (Asafetida Mixture U. S. P. 1880.—Milk of Asafetida.—Lac Asafetida.)

Made like emulsion of ammoniac, substituting asafetida in selected tears for the ammoniac.—U. S. P.

Emulsion Camphorated.

I.

Camphorgr. 15
Alcoholdrops 25
Acacia, powder.....gr. 75
Sugar, powdergr. 365
Emulsion of almond.....fl.oz. 8

Reduce the camphor to fine powder by trituration with the alcohol, then add the acacia and incorporate thor-

oughly, next add the sugar, and finally the almond emulsion.—H.

II.

Sweet almond, blanched....gr. 365
Sugargr. 365
Camphor waterfl.oz. 7½

Make an emulsion of the almonds with the water, strain, and dissolve the sugar in the colature.—D.

III. Camphor may also be emulsified by dissolving it in oil (the official liniment of camphor may be used) and making an emulsion of this solution in the usual manner for fixed oils.

For an emulsion which contains camphor with chloroform, see Emulsion of Chloroform, No. III.

Emulsion of Castor Oil.

I.

Castor oilav.oz. 5¼
Acacia, fine powder.....gr. 575
Tincture of vanilla.....fl.dr. 3½
Simple syrup.....fl.oz. 3½
Water.....to make fl.oz. 16

Carefully weigh the castor oil and the acacia into a mortar, triturate until well mixed; then add 2 fluidounces of water all at once to the mixture of oil and acacia, triturating briskly until a thick, creamy emulsion is produced. To this add gradually with stirring, a mixture of the syrup and tincture with a portion of the remaining water, and finally enough water to make 16 fluidounces.—N. F.

This emulsion contains about 1/3 its volume of oil. The flavoring may be varied to suit. The preparation should be freshly prepared as required.

See also Emulsion of Castor Oil, Palatable.

II. This makes an excellent emulsion of castor oil much stronger than the preceding:

Castor oilfl.oz. 11
Egg yolkfl.oz. 2
Syrupfl.oz. 3
Oil of cassia.....fl.dr. 1½

Beat the yolk thoroughly in a mortar, add the two oils, triturate until emulsified, and finally add the syrup.

III. The following is the castor oil mixture of the Brit. Pharm.:

Castor oil	fl.oz. 6
Mucilage of acacia.....	fl.oz. 3
Orange flower water, stronger	fl.oz. 2
Cinnamon water	fl.oz. 5

Mix the two waters, place the mucilage into a mortar and add to it, alternately, in portions, the oil and the waters, with constant trituration.

Emulsion of Castor Oil, Palatable.

Castor oil	av.oz. 8
White of 3 eggs, or about..	fl.dr. 13
Sugar	av.oz. 4
Oil of cinnamon.....	drops 15
Water, to make.....	fl.oz. 16

Emulsify the oils in a mortar with the egg white and $1\frac{1}{2}$ fluidounces of water, in this dissolve the sugar by agitation, strain through a moistened straining cloth, and add enough water through the strainer to make 16 fluidounces.

Should be freshly made when wanted.

This contains 50 per cent. of castor oil.—Cinc. Acad. Pharm.

Emulsion of Chian Turpentine, Dr. Clay's.

Chian turpentine	gr. 120
Stronger ether	fl.dr. 4
Mucilage of acacia.....	fl.oz. 4
Glycerite of yolk of egg...	fl.oz. 2
Simple syrup	fl.oz. 1
Sulfur	gr. 40
Cinnamon water, to make..	fl.oz. 16

Dissolve the turpentine in the ether, mix the mucilage with the glycerite in a mortar, add the ethereal liquid, and triturate until emulsified. Triturate the sulfur with the syrup, incorporate this with the emulsion, and then add the cinnamon water.

Emulsion of Chloroform. (Chloroform Mixture U. S. P. 1880.)

I.

Chloroform	m. 80
Sweet almond oil.....	fl.dr. 2
Tragacanth, very fine powder.	gr. 20
Water, to make.....	fl.oz. 4

Introduce the tragacanth into a perfectly dry bottle of sufficient capacity, add the chloroform, and shake the bottle thoroughly so that every part of the

interior surface may become wetted. Then add about 1 fluidounce of water and incorporate it by vigorous shaking. Next add the oil, in several portions, shaking after each addition, and when the oil has become thoroughly emulsified, add enough water, in divided portions, shaking after each addition, until the product measures 4 fluidounces.—U. S. P.

The above involved procedure is unnecessary. An equally efficient and more convenient method of emulsifying the chloroform is to mix it with all the oil in a suitable bottle, turn the bottle about so as to moisten every portion of its interior with the oily mixture, then introduce the tragacanth, agitate until well mixed, then add, all at once, 3 fluidounces of water, agitate the whole thoroughly until well mixed, and finally incorporate the remainder of the water.

Each fluidram contains $2\frac{1}{2}$ m. of chloroform.

The N. F., 1st edition, and the U. S. P. 1880 also recognized emulsions of chloroform.

II.

Chloroform	m. 80
Tincture of soap bark	fl.dr. 1
Acacia, fine powder.....	gr. 24
Water, to make.....	fl.oz. 4

Put the chloroform and tincture into a 4-ounce bottle, add the acacia, shake well, add the water, and again shake well.—N. F. (1st Edit.).

III. The U. S. P. 1880 recognized a compound emulsion of chloroform under the name "chloroform mixture." The formula was as follows:

Chloroform	fl.dr. 2
Camphor	gr. 45
Yolk of egg.....	fl.dr. 4
Distilled water	fl.oz. $3\frac{3}{4}$

Rub the yolk, first by itself in a mortar, then with the camphor previously dissolved in the chloroform, and finally the water gradually added so as to make a uniform mixture.

This contains about 8 per cent. by weight of chloroform and about 2 per

cent. of camphor, or each fluidram contains about $3\frac{1}{2}$ m. of chloroform and about $1\frac{1}{4}$ gr. of camphor.

Emulsion of Cod Liver Oil.

The U. S. P. recognizes one emulsion of cod liver oil, which is made with acacia, while the N. F. recognizes four emulsions of cod liver oil made with acacia, mucilage of Irish moss, glycerite of yolk of egg, and dextrin mucilage. These emulsions may be plain; that is, may consist simply of oil, emulsifier, water, sugar and flavoring, or they may be combined with other agents, such as hypophosphites, phosphates, lactophosphates, phosphorus, creosote, etc., or perhaps with two or more such agents. The method adopted in incorporating these medicaments varies according to its character; if it be soluble in the oil, it is added to the latter before emulsifying, and if soluble in water it is dissolved in the latter before it is added to the mixture of gum and oil. Should, however, the substance not be soluble in either the oil or water, then other methods still must be adopted; if it be solid in character, it should be triturated to a very fine powder and be added to the emulsion; if it be an alcoholic liquid, like tincture of benzoin or spirit of nitrous ether, it is generally best to add it to the emulsion after all the water has been added.

Flavoring.—Emulsions of cod-liver oil usually require flavoring, and this consists most frequently in the addition of a volatile oil, like cassia, wintergreen, bitter almond, sassafras, etc., which should be added to the oil before emulsification, or it may consist of a flavored syrup like syrup of tolu, which should be incorporated with the emulsion after most of the water has been added. No objection can be made to using two or three flavoring agents.

Since no single or compound aromatic can be devised which would be acceptable under all circumstances as a flavor-

ing for emulsion of cod-liver oil, the selection of the most suitable aromatic must be left to the prescriber or dispenser. Among those which are found to be most serviceable, according to the N. F., are the following, the quantities given below being intended for 16 fluidounces of finished emulsion, though in some cases a smaller or a larger quantity, in the same proportions, may be preferable:

1. Oil of wintergreen.....m. 30
2. Oil of wintergreen.....m. 15
Oil of sassafras.....m. 15
3. Compound spirit of orange....m. 15
4. Oil of wintergreenm. 15
Oil of bitter almond.....drops 4 to 6
Oil of coriander.....drops 4 to 6
5. Oil of wintergreen.....m. 15
Oil of sassafras.....m. 15
Oil of bitter almond.....drops 4 to 6
6. Oil of wintergreen.....m. 20
Oil of bitter almond.....m. 20
7. Oil of nerolim. 15
Oil of bitter almond.....m. 15
Oil of clove.....drops 4 to 6

Preservation.—When an emulsion of cod-liver oil is to be kept for some time, its deterioration may be prevented or retarded by the addition of 1 fluidounce of alcohol in the place of the same quantity of water, when making 16 fluidounces of emulsion.

The emulsions here given are made with the use of different emulsifying agents and different flavoring agents, but no one need be restricted to the use of such of either as may be mentioned.

In the formulas for acacia cod-liver oil emulsions taken from the N. F., the proportions of oil and acacia relative to the total amount have been slightly increased; the N. F. directs 464 grams of oil and 116 of acacia to make 1000 cc., where as this work directs 8 av. ounces of oil and 2 of acacia to make 16 fluidounces. The slight increase makes no difference and conveniently rounds out the quantities.

I. Acacia emulsion (of the U. S. P.):

Cod liver oil.....	f.oz. 8
Acacia, fine powder.....	av.oz. 2
Simple syrup	f.dr. 13
Oil of wintergreen.....	m. 30
Water.....	to make f.oz. 16

Rub the acacia with the cod liver oil in a dry mortar until uniformly mixed, then add at once 4 fluidounces of water, and triturate lightly and rapidly until a thick, homogeneous emulsion is produced; to this add the oil of wintergreen and enough water to make 16 fluidounces, and mix thoroughly.

The oil of wintergreen may be replaced if desired by a suitable quantity of oil of bitter almond or other suitable flavoring.

II. Acacia emulsion (preferred formula of N. F.):

Cod-liver oil	av.oz. 8
Acacia, fine powder.....	av.oz. 2
Syrup of tolu.....	f.dr. 13
Flavoring (any desired kind, see above).....	sufficient
Water.....	to make f.oz. 16

Triturate oil and acacia together thoroughly in a mortar, add 3 fluidounces of water all at once to the mixture of oil and acacia, triturating briskly until a thick, creamy emulsion is produced. To this add the flavoring and syrup and then the remainder of the water.

The 1st N. F. directed 8 fluidounces of oil, 720 grains of acacia, 2 fluidounces of syrup of tolu, desired flavoring, and water to make 16 fluidounces.

Emulsion of cod-liver oil may also be prepared by any other method capable of emulsifying oil, the following formulas being given as examples:

III. Irish Moss Emulsion:

Cod-liver oil	f.oz. 8
Mucilage of Irish moss.....	f.oz. 5
Syrup of tolu.....	f.dr. 13
Flavoring (any desired kind, see above).....	sufficient
Water.....	to make f.oz. 16

Pour the mucilage into a suitable bottle, add the oil in divided portions, shaking well after each addition, and when a perfect emulsion is formed, add

the syrup and flavoring, and lastly, enough water to make 16 fluidounces. Finally, mix the whole thoroughly together.—N. F.

This was the preferred formula of the 1st N. F. but the acacia emulsion is now preferred.

IV. Glyconin Emulsion:

Cod-liver oil	f.oz. 8
Glycerite of yolk of egg.....	f.oz. 2¾
Syrup of tolu.....	f.dr. 13
Flavoring (any desired kind, see above)	sufficient
Water, to make.....	f.oz. 16

Triturate the glycerite (glyconin) in a mortar with the oil, added in small portions at a time, and thoroughly incorporate each portion before adding the next. Then, continuing the trituration, gradually add the syrup and flavoring. Finally add enough water to make 16 fluidounces, and mix the whole thoroughly together.—N. F.

V. Dextrin Emulsion:

Cod-liver oil	f.oz. 8
Mucilage of dextrin.....	f.oz. 5¼
Syrup of tolu.....	f.oz. 2
Flavoring (any desired kind, see above)	sufficient
Water, to make.....	f.oz. 16

To the mucilage contained in a suitable bottle add the oil, first in small portions, agitating each time, until the last added portion is emulsified. Then add the flavoring, the syrup and lastly, enough water to make 16 fluidounces, and mix the whole thoroughly together.—N. F.

VI. Quillaja Emulsion:

Cod-liver oil	f.oz. 8
Tincture of soap-bark.....	f.oz. 1
Syrup of tolu.....	f.dr. 13
Flavoring (any desired kind, see above)	sufficient
Water.....	to make f.oz. 16

Pour the tincture into a suitable bottle, then add the oil in portions of about 2 fluidounces each, and shake after each addition until a perfect emulsion results. Next add the syrup and the flavoring, and lastly, enough water to make 16 fluidounces. Finally, mix the

whole thoroughly together.—Former N. F.

An 85 per cent. emulsion of cod-liver oil may be prepared by mixing in the manner just prescribed:

Cod-liver oilfl.oz. 13½
Tincture of soap-bark.....f.dr. 13
Flavoring (any desired kind,
see above)sufficient
Syrup of tolu.....to make fl.oz. 16

Emulsion of cod-liver oil made with quillaja should not be dispensed without the direction or consent of the prescriber. In fact, these formulas are only given here in deference to the N. F.; they should never be used.

VII. Condensed Milk Emulsion:

Cod-liver oilfl.oz. 8
Condensed milkav.oz. 6
Oil of sassafras.....drops 10
Oil of wintergreen.....drops 10
Oil of bitter almond.....drops 2
Glycerinfl.oz. 1
Water, to make.....fl.oz. 16

Add the oil in divided portions to the condensed milk, taking care that each portion of oil is well emulsified before adding another portion. Occasionally where the emulsion becomes too thick, a small quantity of water may be added. Then incorporate the flavoring oils, the glycerin, and the remainder of the water.

Only the thick condensed milk can be used as an emulsifier; the non-saccharated kind is unsuited for this purpose.

VIII.

Cod-liver oilfl.oz. 8
Yolk of two eggs,
Tragacanth, powdergr. 16
Elixir of saccharin.....f.dr. 1
Tincture of benzoin.....f.dr. 1
Spirit of chloroform.....f.dr. 4
Oil of bitter almond.....m. 8
Distilled water, to make....fl.oz. 16

—Brit. Form.

Measure 5 fluidounces of distilled water, place the powdered tragacanth in a dry mortar, and triturate with a little of the cod-liver oil; then add the egg-yolk and stir briskly, adding water as the mixture thickens. When of a

suitable consistence, add the remainder of the oil and water alternately, with constant stirring, avoiding frothing. Transfer to a pint bottle, add the elixir of saccharin, tincture of benzoin, spirit of chloroform, and oil of almond, previously mixed, shake well, and add distilled water, if necessary, to make 16 fluidounces.

Instead of the elixir of saccharin, the solution of saccharin, N. F., may be employed.

IX. Lime Emulsion:

Cod-liver oilfl.oz. 8
Lime waterfl.oz. 4
Tincture of soap-bark....f.dr. 4
Glycerinfl.oz. 1
Oil of wintergreen.....drops 15
Oil of sassafras.....drops 15
Oil of anise.....drops 15
Mucilage of acacia, Irish
moss or dextrin, to make.fl.oz. 16

Agitate the oil, water and tincture together in a bottle until well mixed, then add the glycerin and volatile oils, shake again, and finally add the mucilage and shake again.

X. Acacia and Tragacanth Emulsion:

Acacia, powdergr. 60
Tragacanth, powdergr. 60
Starch, powdergr. 60
Cod-liver oilfl.oz. 8
Simple syrupf.oz. 2
Oil of bitter almond.....drops 10
Water.....to make fl.oz. 16

Triturate the powders thoroughly with the cod-liver oil, then add gradually 5½ fluidounces, triturating constantly, incorporate the almond oil and syrup, and finally add enough water to make 16 fluidounces of product.

XI. Saccharated Casein Emulsion:

Cod-liver oilfl.oz. 8
Saccharated caseinav.oz. 4
Water.....to make fl.oz. 16

Triturate the casein with 4 fluidounces of water until well mixed, then add the oil in divided portions, being careful that each portion is emulsified before adding more. Occasionally, as the mixture becomes too thick, a small amount of water must be added. Finally add enough water to make 16 fluidounces.

XII. Egg Emulsion:

For examples of egg emulsions of cod-liver oil see Nos. III and VII, or prepare as follows:

Cod-liver oil	f.oz. 8
Yolk of egg	f.oz. 2
Simple syrup	f.oz. 2
Water	f.oz. 4

Thoroughly triturate the oil in a suitable mortar, gradually incorporate the oil, emulsifying each portion before more is added, then incorporate the water and finally the syrup.

XIII. Chocolate Emulsion:

A so-called chocolate emulsion of cod-liver oil may be prepared by emulsifying 8 fluidounces cod-liver oil with acacia, mucilage of Irish moss or mucilage of dextrin in the usual manner as described above, then adding $\frac{1}{2}$ to 1 av. ounce of powdered cocoa or chocolate, about 2 fluidounces of simple syrup, 2 to 4 fluidrams of tincture of vanilla, and enough water to make 16 fluidounces.

XIV. The emulsions of cod-liver oil with malt extract are considered under Extract of Malt, which see.

Emulsion of Cod-Liver Oil with Coca.**I.**

Stronger emulsions of cod-liver oil	f.oz. 14
Elixir of coca	f.oz. 2
Oil of clove	drops 24

Add the elixir and oil gradually to the emulsion, shaking thoroughly after each addition.

Each fluidram represents nearly 1 gr. of coca.

II. Prepare an emulsion like any of those mentioned under Emulsion of Cod-Liver Oil, replacing 2 fluidounces of water by elixir of coca, and flavoring in any desired manner.

Emulsion of Cod Liver, Compound. (Egg Emulsion of Cod-Liver Oil with Creosote and Iron.)

Cod-liver oil	av.oz. $5\frac{1}{2}$
Yolk of egg (about 12) ..	f.oz. 5
Creosote	f. dr. 3

Sweet almond, blanched....	gr. 300
Brandy	f.oz. $2\frac{1}{2}$
Solution of iron peptonate (Cinc. Acad. Pharm.) ..	f.oz. $3\frac{1}{4}$
Oil of bitter almond	drops 5
Oil of lemon	drops 5
Distilled water	f. dr. 11
Simple syrup	to make f.oz. 16

Rub the almond to powder, add water gradually to make a smooth paste, add the creosote, emulsify the latter by trituration, add the remainder of the water, and strain.

Beat the yolk of egg with the brandy to a smooth mixture, and gradually add the oils so as to emulsify well. Then to this add the creosote emulsion and the solution of iron peptonate, mix well, and incorporate enough syrup to make 16 fluidounces.—Cinc. Acad. Pharm.

This preparation should be freshly prepared when wanted.

Each fluidram contains about 20 drops of cod-liver oil, $1\frac{1}{2}$ drops of creosote and 6 drops of solution of iron peptonate.

Emulsion of Cod-Liver Oil with Creosote and Hypophosphites.

Cod-liver oil	f.oz. 8
Creosote, pure (beech-wood)	f. dr. 2
Acacia, powder	av.oz. 2
Calcium hypophosphite	gr. 128
Sodium hypophosphite	gr. 128
Oil of wintergreen	m. 30
Oil of sassafras	m. 30
Oil of cinnamon	m. 30
Glycerin	f.oz. 1
Syrup of orange	f. dr. 4
Distilled water, to make ..	f.oz. 16

Mix the cod-liver oil, creosote, and essential oils, with the acacia, in a dry mortar; dissolve the hypophosphites in 3 fluidounces of water, pour the solution, all at once, into the other mixture, and stir briskly in one direction with the pestle until emulsification takes place; then add the glycerin, syrup and enough water to make 16 fluidounces.

Each fluidram contains about 1 drop of creosote and 1 gr. each of hypophosphites.

Emulsion of Cod-Liver Oil with Hypophosphites.**I.**

Cod-liver oil	f℥.oz. 8
Acacia, fine powder.....	av.oz. 2
Calcium hypophosphite.....	gr. 36
Potassium hypophosphite....	gr. 18
Sodium hypophosphite.....	gr. 18
Simple syrup	f℥.dr. 13
Oil of wintergreen.....	m. 30
Water, to make.....	f℥.oz. 16

Rub the acacia with the cod-liver oil in a dry mortar until uniformly mixed, then add at once 4 fluidounces of water and triturate lightly and rapidly until a thick, homogenous emulsion is produced, add the oil of wintergreen and incorporate thoroughly. Dissolve the three hypophosphites in 13 fluidrams of water, mix the solution with the syrup, and add the liquid gradually to the emulsion with continued trituration. Lastly, add enough water to make the product measure 16 fluidounces, and mix thoroughly.—U. S. P.

II.

Cod-liver oil	av.oz. 8
Acacia, fine powder.....	av.oz. 2
Any soluble hypophosphite (calcium, sodium, or po- tassium)	gr. 128
Syrup of tolu.....	f℥.dr. 13
Flavoring (any desired kind, see above).....	sufficient
Water, to make.....	f℥.oz. 16

Emulsify the oil with the acacia and 3 fluidounces of water, and add the flavoring. Then dissolve the hypophosphite in sufficient water, mix this solution with the syrup, and add the mixture gradually to the emulsified oil; lastly, add enough water to make 16 fluidounces, and mix the whole thoroughly.

If several hypophosphites are required, and no definite quantity is directed, equal parts of them may be used, amounting altogether to 128 gr. for the above formula. Varying quantities, larger or smaller than the above, may, of course, be used upon prescription.—N. F. (1st Edit.).

The above is intended only as an example of this kind of a combination.

Each fluidram contains 1 gr. of hypophosphite.

III.

Stronger emulsion of cod- liver oil	f℥.oz. 14
Oil of sassafras.....	m. 15
Oil of wintergreen.....	m. 15
Any soluble hypophosphite..	gr. 128
Water	f℥.oz. 2

Agitate the emulsion with the oils, then with the water containing the hypophosphite in solution.

Emulsion of Cod-Liver Oil with Hypophosphite of Calcium.

Prepare like the preceding, using 128 gr. of calcium hypophosphite for every 16 fluidounces of emulsion.

Emulsion of Cod-Liver Oil with Hypophosphites of Calcium and Sodium.

Prepare like the preceding but using 64 grains each of the hypophosphites of calcium and sodium instead of the other hypophosphite.

Emulsion of Cod-Liver Oil with Hypophosphites of Calcium, Sodium and Potassium.

Stronger emulsion of cod- liver oil	f℥.oz. 12
Calcium hypophosphite....	gr. 128
Sodium hypophosphite.....	gr. 96
Potassium hypophosphite....	gr. 64
Flavoring (any desired kind, see above).....	sufficient
Water, to make.....	f℥.oz. 16

Agitate the emulsion with the flavor, then with 3 fluidounces of water containing the hypophosphites in solution, and finally with the balance of the water.

Each fluidram contains 1 gr., $\frac{3}{4}$ gr. and $\frac{1}{2}$ gr. respectively of each of the hypophosphites.

Emulsion of Cod-Liver Oil with Lactophosphate of Calcium.**I.**

Cod-liver oil	av.oz. 8
Acacia, fine powder.....	av.oz. 2
Calcium lactate	gr. 256
Phosphoric acid (U. S. P., 85 per cent.).....	f℥.oz. 1½
Syrup of tolu.....	f℥.oz. 1½
Flavoring (any desired kind, see above).....	sufficient
Water.....	to make f℥.oz. 16

Emulsify the oil with the acacia, and 3 fluidounces of water, and add the flavoring. Then dissolve the calcium lactate in 1 fluidounce of water with the aid of the phosphoric acid, add the solution gradually to the emulsified oil, then the syrup, and lastly enough water to make 16 fluidounces. Mix the whole thoroughly.

This emulsion should be freshly prepared when wanted.—N. F.

Each fluidram contains about $2\frac{1}{2}$ gr. of so-called "lactophosphate of calcium."

II.

Stronger emulsion of cod-liver oilfl.oz. 14
Oil of sassafras.....m. 15
Oil of wintergreen.....m. 15
Calcium lactategr. 256
Phosphoric acid (U. S. P.
or 85 per cent.).....fl.dr. $1\frac{1}{2}$
Water, to make.....fl.oz. 16

Agitate the emulsion with the oils, then dissolve the calcium lactate in 1 fluidounce of water with the aid of the acid, add this solution to the emulsion, agitate again, add enough water to make 16 fluidounces, and agitate again.

Emulsion of Cod-Liver Oil with Malt Extract.

See Extract of Malt and its combinations.

Emulsion of Cod-Liver Oil with Phosphate of Calcium.

I.

Cod-liver oilav.oz. 8
Acacia, fine powder.....av.oz. 2
Calcium phosphategr. 256
Syrup of tolu.....fl.dr. 13
Flavoring (any desired
kind, see above).....sufficient
Water.....to make fl.oz. 16

Emulsify the oil with the acacia, and 3 fluidounces of water, and add the flavoring. Then triturate the calcium phosphate with the syrup and a portion of the remaining water, add the mixture gradually to the emulsified oil, and lastly, enough water to make 16 fluidounces. Mix the whole thoroughly.

The mixture should be well shaken before use.

Each fluidram contains 2 gr. of calcium phosphate.—N. F.

II.

Stronger emulsion of cod-liver oilfl.oz. 14
Oil of sassafrasm. 15
Oil of wintergreen.....m. 15
Calcium phosphategr. 256
Water, to make.....fl.oz. 16

Agitate the emulsion with the oils; triturate the calcium phosphate to a smooth mixture with $1\frac{1}{2}$ fluidounces of water, add this to the emulsion, agitate again, add enough water to make 16 fluidounces, and mix well.

Emulsion of Cod-Liver Oil with Phosphates of Calcium and Sodium.

I.

Cod-liver oilav.oz. 8
Acacia, fine powder.....av.oz. 2
Calcium phosphategr. 128
Sodium phosphategr. 128
Syrup of tolufl.dr. 13
Flavoring (any desired kind,
see above)sufficient
Water, to makefl.oz. 16

Emulsify the oil with the acacia, and 3 fluidounces of water, and add the flavoring. Then triturate the salts to a fine powder, incorporate with the syrup and a portion of the remaining water, and triturate with the emulsified oil. Finally, add enough water to make 16 fluidounces, and mix the whole thoroughly together.—N. F.

Each fluidram contains 1 gr. each of the phosphates of calcium and sodium.

II.

Stronger emulsion of cod-liver oilfl.oz. 14
Oil of sassafrasm. 15
Oil of wintergreen.....m. 15
Calcium phosphategr. 128
Sodium phosphategr. 128
Water, to make.....fl.oz. 16

Triturate the two phosphates with $1\frac{1}{2}$ fluidounces of water until well mixed. Add the oils to the emulsion, agitate well, add the aqueous mixture, again agitate, then add enough water to make 16 fluidounces, and again agitate thoroughly.

Emulsion of Cod-Liver Oil with Phosphate of Sodium.

Every 16 fluidounces should contain 128 gr. of sodium phosphate. This should be dissolved in 2 fluidounces of water which may be added to 14 fluidounces of either simple or stronger emulsion of cod-liver oil, or the solution may be incorporated during the process of emulsification in making an emulsion of cod-liver oil.

Each fluidram contains 1 gr. of sodium phosphate.

Emulsion of Cod-Liver Oil, Phosphatic. (Phosphatic Emulsion.—Phosphatic Mixture.)

Cod-liver oil	f.oz.	4
Glycerite of yolk of egg...	av.oz.	2¾
Diluted phosphoric acid...	f.dr.	6½
Oil of bitter almond.....	drops	15
Rum, Jamaica	f.oz.	4
Orange flower water, to make	f.oz.	16

To the glycerite contained in a suitable bottle, gradually add the cod-liver oil, in small portions at a time, shaking after each addition, until the added portion is emulsified. Then gradually add the acid, rum and oil of bitter almond, incorporating them thoroughly. Finally, add the orange flower water and mix the whole thoroughly.—N. F.

Emulsion of Cod-Liver Oil, Phosphorized.

Cod-liver oil	av.oz.	8
Acacia, powder	av.oz.	2
Calcium hypophosphite	gr.	128
Sodium hypophosphite	gr.	128
Spirit of phosphorus.....	f.oz.	1
Simple syrup	f.oz.	1
Water, to make	f.oz.	16

Triturate the oil with the acacia until well mixed, add 3 fluidounces of water, all at once, until emulsification is completed, then add 2 fluidounces of water in which the hypophosphites have been dissolved, then the spirit and syrup, and finally enough water to make 16 fluidounces, and stir the whole thoroughly together.

Each fluidram contains 1 gr. each of the hypophosphites of calcium and sodium and about 1/200 gr. of phosphorus.

Emulsion of Cod-Liver Oil, Stronger.

Prepare this like emulsion of cod-liver oil No. I or II, but adding only enough water to make 14 fluidounces of product.

Instead of using formula No. I or II, Nos. III, IV, V, VII, VIII, IX, X, XI or XII may be used instead if thought more desirable, leaving out a portion of the water as before.

This makes a stock emulsion to be used for preparing the usual 50 per cent. simple emulsion of cod-liver oil, or compound emulsions containing such additions as may be desired.

It is advisable to keep this emulsion in the bottles in which the emulsions are usually dispensed, 7 fluidounces in an 8-ounce bottle, 14 fluidounces in a 16-ounce bottle, etc. Whenever an emulsion of cod-liver oil, simple or compound, is wanted it can then, in many cases at least, be quickly prepared by simple addition of the requisite ingredients. The medicating agent, if liquid, may be added, the mixture agitated, enough water added to fill the bottle, and the whole again agitated. Or if the medicating liquid be solid, it may be dissolved, or, if insoluble, triturated with the water, the solution or mixture added to the emulsion, enough water added to fill the bottle, and the whole again well agitated.

Emulsion of Cod-Liver Oil with Wild Cherry.

I.

Cod-liver oil	av.oz.	8
Acacia, fine powder	av.oz.	2
Fluid extract of wild cherry.....	f.oz.	1
Syrup of tolu	f.dr.	13
Flavoring (any desired kind, see above)	sufficient	
Water, to make.....	f.oz.	16

Emulsify the oil with the acacia and 3 fluidounces of water, and add the flavoring. Mix the fluid extract and syrup with a portion of the remaining water, and add the mixture gradually to the emulsified oil. Lastly, add enough water to make 16 fluidounces and mix the whole thoroughly.—N. F.

II.

Stronger emulsion of cod-liver oil	f.oz. 14
Oil of bitter almond.....	drops 5
Fluid extract of wild cherry.....	f.oz. 1
Simple syrup	f.oz. 1
Mix well by agitation.	

Emulsion of Linseed Oil, Dr. Thomson's.

Linseed oil	f.oz. 4
Oil of wintergreen.....	f.dr. ½
Oil of cinnamon	f.dr. ½
Acacia, powder	av.oz. 2
Water	f.oz. 6½
Glycerin	f.oz. 1½
Simple syrup	f.oz. 3
Hydrocyanic acid, diluted.....	m. 45

Triturate the mixed oils with the acacia, add 3 fluidounces of water, triturate until emulsified, add the syrup, glycerin, acid, and remainder of the syrup and mix well.

Emulsion of Monobromated Camphor.

Monobromated camphor	gr. 36
Sweet almond oil.....	f.dr. 5
Acacia, powder	gr. 135
Distilled water, to make....	f.oz. 4

Dissolve the camphor compound in the oil, add the gum, triturate well, add 4½ fluidrams of water, triturate until an emulsion is formed, and then add enough water to make 16 fluidounces.—D.

Emulsion of Paraffin Oil and Hypophosphites. (Compound Emulsion of Liquid Petrolatum.—Emulsion of Petroleum with Hypophosphites, Brit. Form.)

This may be prepared acceptably according to either of the following methods:

I.

Paraffin oil (liquid petrolatum)	f.oz. 5½
Acacia, powder	av.oz. 2½
Glycerin	f.oz. 1¼
Calcium hypophosphite	gr. 96
Sodium hypophosphite	gr. 96
Water, to make.....	f.oz. 16

Add the acacia to the oil and mix thoroughly in a large mortar, then add 4 fluidounces of water, all at once, and triturate briskly until the emulsion is

formed. Dissolve the hypophosphites in 3 fluidounces of water, to which add the glycerin; then add this to the emulsion and rub well together, add water to make up 16 fluidounces, and triturate thoroughly.

This contains about 33¼ per cent. of paraffin oil and ¾ gr. of each of the hypophosphites.

See also Emulsion of Petroleum, to which hypophosphites may be added if desired.

II.

Liquid petrolatum	f.oz. 4
Oil of sweet almond.....	f.oz. 2
Acacia, powder	av.oz. 1½
Glycerin	f.oz. 1
Sodium hypophosphite.....	gr. 128
Calcium hypophosphite.....	gr. 128
Lime water	f.oz. 4
Water, to make.....	f.oz. 16

Mix all the oil and petrolatum and incorporate well with the gum, then add 2½ fluidounces of the water all at once, stir briskly until an emulsion is formed; dissolve the hypophosphites in 3 fluidounces of the lime water, mix with the preceding liquid, then add the glycerin, and enough water to make 16 fluidounces.

This contains 25 per cent. of liquid petrolatum and 1 gr. of each of the hypophosphites.

These preparations may be flavored in any suitable manner.

III.

Liquid paraffin	f.oz. 5
Acacia, powder	av.oz. 2½
Oil of cinnamon.....	m. 15
Tragacanth, powder	gr. 75
Calcium hypophosphite.....	gr. 120
Sodium hypophosphite.....	gr. 120
Distilled water, to make....	f.oz. 15

Mix the first four ingredients thoroughly in a mortar, add all at once 3¾ fluidounces of water, triturate until a perfect emulsion is produced, then add the hypophosphites dissolved in 2½ fluidounces of water, and finally add enough water to make 15 fluidounces.—Brit. Form.

Emulsion of Petroleum.

White petrolatum	gr. 360
Sweet almond oil.....	fl.oz. 4½
Acacia, fine powder.....	gr. 360
Tragacanth, fine powder....	gr. 180
Simple syrup	fl.oz. 1½
Tincture of lemon peel....	fl.dr. 2
Water, to make.....	fl.oz. 16

Melt the petrolatum and mix it thoroughly with the almond oil. Mix the acacia and tragacanth, in a capacious mortar, with 2½ fluidounces of water, and add the oil mixture gradually, triturating rapidly until a smooth emulsion is formed. To this add the syrup and tincture and the remainder of the water, and mix well.—N. F.

See also Emulsion of Paraffin Oil with Hypophosphites for similar preparations.

Emulsion, Phosphatic.

See Emulsion of Cod-Liver Oil, Phosphatic.

Emulsion of Phosphorus. (Phosphorated Emulsion.)

Phosphorated oil	m. 10
Olive oil	m. 10
Acacia, powder	gr. 60
Distilled water	m. 90
Peppermint water	fl.oz. ¾
Simple syrup	fl.dr. 3

Mix the oils and gum in a dry mortar, emulsify by addition of the water, then add the peppermint water and the syrup, and mix well.—D.

Each fluidram represents about 1/300 gr. of phosphorus.

The proportion of phosphorus in the product can be increased by using more of the phosphorated oil and correspondingly less of the olive oil.

Emulsion of Pumpkin Seed.

Eclectic:

Pumpkin seed, fresh.....	av.oz. 2
Water	fl.oz. 7½

Beat the seeds in a mortar until the outer envelope is broken, then add 1 fluidounce of water and rub the mixture briskly; continue to beat and rub it, with occasional additions of small portions of water, until 7½ fluidounces have been added and the outer envelope is completely separated from the pulp,

which is converted by the process into a smooth emulsion. Strain by passing through a wire sieve, rubbing the separated envelopes to remove, as thoroughly as possible, adherent portions of the pulp.

This is used to expel tapeworm, giving the above amount at night, allowing no supper and but a light diet during the day. The following morning a dose of castor oil should be given, to which 30 to 60 drops of ether may be added to make the treatment more certain. To the emulsion may be added sugar or milk, if desired, to make it more palatable.

Emulsion of Salicylic Acid. (Emulsio Salicylica.)

Salicylic acid	gr. 40
Sweet almond oil.....	fl.dr. 6
Acacia, powder	gr. 160
Orange flower water.....	fl.oz. 2¾
Simple syrup	fl.dr. 3

Mix the salicylic acid and oil, add the gum, and to this mixture add 4 fluidrams of orange flower water, stirring briskly until emulsification is complete; then add the remainder of the water and the syrup.—D.

This forms about a 2 per cent. emulsion of salicylic acid, each fluidram containing about 1¼ gr. of salicylic acid.

Emulsion of Spermaceti.

An emulsion of spermaceti may be prepared as follows:

Spermaceti	gr. 64
Acacia, powder	gr. 15
Water, warm	fl.oz. 3¾
Simple syrup	fl.oz. ¾

Put the syrup and gum into a warm mortar, add the spermaceti and triturate with a warm pestle until well mixed; then add the warm water gradually, and continue agitation or trituration until the whole is cold.

Emulsion of Turpentine Oil.

I.

Oil of turpentine, rectified..	fl.dr. 4½
Sweet almond oil.....	fl.dr. 1½
Simple syrup	fl.oz. 1
Acacia, fine powder.....	gr. 270
Water, to make.....	fl.oz. 4

Introduce the acacia into a perfectly dry bottle of sufficient capacity, add the two oils, shake the bottle thoroughly, then add 9 fluidrams of water, and incorporate by vigorous shaking. When the oils have been completely emulsified, first add the syrup, in several portions, shaking after each addition, and then enough water, in divided portions, shaking after each addition, to make the product measure 4 fluidounces.—U. S. P.

This differs from the formula of the N. F. (No. II) and the two formulas illustrate different methods of making emulsions of volatile oils. It is considered that the addition of a bland fixed oil to a volatile oil makes the emulsion more permanent. About 1 volume of fixed oil to 2 volumes of volatile oil will be sufficient

II.

Oil of turpentine.....	f℥.dr. 4
Acacia, fine powder.....	gr. 36
Yolk of egg	f℥.dr. 5
Aromatic elixir	f℥.dr. 5
Cinnamon water, to make.....	f℥.oz. 4

Triturate the acacia with the yolk of egg, then add the oil very slowly, continuing the trituration, and finally add the elixir and enough cinnamon water, in the same manner, to make 4 fluidounces.—N. F. (1st Edit.).

For general formulas for making emulsions of volatile oils, see Emulsions of Volatile Oils.

Emulsion of Turpentine Oil, Stronger. (Forbes' Emulsion of Oil of Turpentine.)

Oil of turpentine.....	f℥.oz. 4
Acacia, fine powder.....	gr. 90
Water	f℥.oz. 4

Pour the oil into a perfectly dry vial, having a capacity of a little more than 8 fluidounces, and shake so that the inner surface may be completely wetted by the oil. Then add the acacia, and shake again. Now add one-half of the water, and shake until the oil separates in form of a milky emulsion. Add the remainder of the water, and continue the shaking until the oil separates from

the water in the form of a creamy emulsion upon standing.

This emulsion must be shaken before dispensing.

The formula for this strong emulsion of oil of turpentine is essentially that proposed by Mr. J. W. Forbes, in 1872. While the oil separates in the form of a cream-like layer upon standing, the two liquids are easily united by brief shaking. It keeps well, and is useful for dispensing small quantities of oil of turpentine in a fairly well emulsified condition.—N. F.

Emulsions of Volatile Oils.

The present National Formulary states that although volatile oils are readily emulsionized by themselves, the addition of a small portion of some bland fixed oil, such as sweet almond oil, is an advantage. Usually about 1 volume of fixed oil will be enough for 2 volumes of the volatile oil as exemplified in the following:

Volatile oil	gr. 150
Sweet almond oil.....	gr. 90
Acacia, fine powder.....	gr. 60
Simple syrup	f℥.dr. 6
Water, to make.....	f℥.oz. 3

Weigh the oils carefully into a mortar, add the acacia and triturate them thoroughly together; then add 90 gr. of water, carefully weighed, and triturate briskly until a creamy emulsion is produced. To this add the syrup and enough water to make 3 fluidounces of emulsion.

The former N. F. gave a different formula, which is worth mentioning:

Volatile	f℥.dr. 4
Acacia, fine powder.....	gr. 110
Simple syrup	f℥.oz. 1
Water, to make.....	f℥.oz. 4

Pour the oil into a perfectly dry bottle, and, having corked the latter, agitate it so that the inner surface will be completely wetted by the oil; then add the acacia, and shake again; finally add the syrup and enough water to make 4 fluidounces, and mix thoroughly.

This latter is the so-called "bottle method" of making emulsions.

Still another method of making an emulsion of a volatile oil may be found under Emulsion of Turpentine Oil.

Emulsions of volatile oils (without fixed oil) made with acacia will separate into aqueous and creamy layers, the former occupying but a small portion of the total volume. Tragacanth makes an emulsion which is liable to be so thick that it cannot be poured from the bottle. A better emulsion will be obtained if acacia and tragacanth be united as follows:

Acacia, powder	gr. 15
Tragacanth, powder	gr. 15
Corn starch	gr. 15
Volatile oil	fl.dr. 4
Simple syrup	fl.oz. 1
Water, to make	fl.oz. 4

Prepare like the above "bottle method" for emulsion of volatile oil, substituting the three powders for the acacia.

Emulsion of Wax.

This may be prepared like the emulsion of spermaceti, substituting yellow wax for the spermaceti, or by the use of the following method of D.:

Yellow wax	gr. 192
Mucilage of acacia	fl.oz. 1¼
Distilled water, warm	fl.oz. 2½

Melt the wax in a capacious mortar on a water bath or by any other suitable method, at the same time warming the pestle; to the wax add the mucilage, mix well until an emulsion is formed, then add the distilled water.

Enemas. (Clysters.—Rectal Injections.)

These are solutions or mixture intended for injection into the rectum. They are intended either for evacuation of the bowels, or for medicating or feeding purposes when the stomach will not retain medicine or food. The amount of liquid used as enema is large or small, depending on the purpose. The Brit. Pharm., 1885 and previous editions, recognized several enemas, but none is official in the 1898 edition.

Esprits.

This is the French name for spirits, or alcoholic solutions of volatile oils.

Essences. (Essentiæ.)

Many of the spirits (see Spirits) are commonly known as "essences." Formulas for other so-called essences are given herewith.

Essence of Diastase and Pancreatin (Disatasic Essence of Pancreatin.)

The following makes a suitable preparation of this kind:

Diastase (malt or taka)	gr. 40
Pancreatin, pure	gr. 40
Sodium bicarbonate	gr. 15
Water	fl.oz. 2
Sherry wine	fl.oz. 2
Simple syrup	fl.oz. 2
Aromatic elixir, to make	fl.oz. 16

Essence of Ginger, Soluble. (Solution of Ginger.—Liquor Zingiberis.—Soluble Tincture of Ginger.)

Fluid extract of ginger (U. S. P.)	fl.oz. 5¼
Pumice, moderately fine powder	av.oz. 1¾
Water, to make	fl.oz. 16

Pour the fluid extract into a bottle, add to it the pumice, and shake the mixture thoroughly and repeatedly in the course of several hours. Then add the water in portions of about 2 fluid-ounces, shaking well and frequently after each addition. When all is added, repeat the agitation occasionally during 24 hours, then filter, returning the first portions of the filtrate until it runs through clear, and, if necessary, pass enough water through the filter to make 16 fluidounces.—N. F.

Essence of Life, Augsburg.

Angelica root	gr. 300
Myrrh	gr. 240
Gentian	gr. 240
Aloes, socotrine	gr. 240
Rhubarb	gr. 120
Zedoary	gr. 120
Spanish saffron	gr. 60
Camphor	gr. 60
Castor	gr. 60
Diluted alcohol	fl.oz. 16

Reduce the drugs to moderately fine powder, add the liquid, macerate for 5 days, agitating frequently, then express, and filter.

This is very similar to the Elixir of Long Life, which see.

Essence of Pepsin.**I.**

Pepsin, scale (1:3000).....gr.	328
Rennin	gr. 240
Lactic acid, 75 per cent.....m.	30
Tinct. of sweet orange peel.fl.dr.	2½
Alcohol	fl.oz. 1½
Simple syrup	fl.oz. 2
Glycerin	fl.oz. 4
Angelica wine	fl.oz. 12
Purified talc	gr. 240
Water, to make	fl.oz. 32

Mix the pepsin and rennin with 10 fluidounces of water, add the acid and agitate until solution is effected. Then add the glycerin, syrup, alcohol, tincture and wine, in the order named, shaking after each addition, followed by enough water to make 32 fluidounces. Incorporate the talc, shake the mixture occasionally during 24 hours, then filter, returning the first portions until the filtrate passes perfectly clear.—N. F.

Rennin is a milk-curdling enzyme prepared from calves' rennets.

The following are among the best of other numerous formulas for this preparation which are in vogue:

II.

Pepsin, scale (1:3000).....gr.	128
Hydrochloric acid, diluted.drops	10
Aromatic elixir	fl.oz. 3
Glycerin	fl.oz. 1
Water	fl.oz. 6
Angelica wine, to make....fl.oz.	16

Mix all, agitate frequently until the pepsin is dissolved, and filter through purified talcum.

III.

Pepsin, scale (1:3000).....gr.	240
Hydrochloric acid, diluted.fl.dr.	1
Glycerin	fl.oz. 1
Comp. elixir of taraxacum.fl.oz.	1
Simple syrup	fl.oz. 2
Alcohol	fl.oz. 2
Oil of clove.....drop	1
Water, to make.....fl.oz.	16

Mix the pepsin, glycerin, acid and 8 fluidounces of water, agitate frequently until the pepsin is dissolved, then add the syrup, elixir, oil of clove first dissolved in the alcohol, and the remainder of the water, and filter.

IV.

Pepsin, scale (1:3000).....gr.	128
Glycerin	fl.oz. 3½
Oil of cinnamon.....drop	1
Oil of pimento.....drop	1
Oil of clove.....drops	2
Hydrochloric acid	m. 20
Purified talcum	av.oz. 1¼
Alcohol	fl.dr. 4
Sherry wine (good, and light color)	fl.oz. 3½
Distilled water, to make...fl.oz.	16

Mix the wine with the acid and 6 fluidounces of water; add to it the pepsin and shake until dissolved; the oils are added to the alcohol, triturated with the talc, the pepsin solution gradually added and filtered; return the first portions until the filtrate is perfectly bright, and pass the remainder of water through filter; when every portion has passed, add the glycerin to the filtrate.

V. Beringer's formula:

Fresh calves' rennet.....av.oz.	3½
Glycerin	fl.oz. 3¼
Alcohol	fl.dr. 14
Tinct. of sweet orange peel.fl.dr.	1½
Water	fl.oz. 11¼
Purified talcum	av.oz. 1

Mix the rennet and glycerin, then add the alcohol, water and tincture of orange, and macerate for 4 or 5 days, with repeated agitation; add the talc, agitate and allow to stand for an hour, or until the talc has been largely deposited; now decant, on a muslin or flannel filter, the supernatant liquid first, and finally the dregs; then filter through paper.

Essence of Tamarinds.

This is the formula adopted by the Berlin Apothecaries' Society:

Tamarind pulp, purified...av.oz.	8¾
Alexandria senna (previously extracted with alcohol)av.oz.	1¼
Water, boiling	fl.oz. 40

Infuse for 12 hours, then strain, press the marc, and evaporate the strained liquor by boiling to 19 av.ounces. Then take 11¼ fluidounces of the residue, neutralize with solution of soda, and add:

Alcohol	fl.oz. 3½
Simple syrup	fl.oz. 1¼
Tincture of vanilla.....fl.dr.	1¼

Etheroles.

These are a class of French preparations similar to the ethereal tinctures used to some extent in this country.

Extracts. (Solid Extracts.)

These are solid or semi-solid preparations, generally made by exhausting a drug, usually in a more or less fine powder, with a suitable menstruum, then evaporating the liquid obtained either to dryness or to pilular consistence.

The process of the U. S. P. for the majority of its extracts is about as follows: Moisten 1 av. pound of drug with $6\frac{1}{2}$ fluidounces of menstruum, pack it firmly in a cylindrical percolator, preferably of glass, and add enough menstruum to saturate the drug and leave a stratum of liquid above it. When the liquid begins to drop from the percolator, close the lower orifice, and having closely covered the percolator, macerate for 48 hours. Then allow percolation to proceed (the rate of flow should be from 2 to 5 drops a minute), gradually adding more menstruum until 46 fluidounces of percolate are obtained or the drug is exhausted. Reserve the first $14\frac{1}{2}$ fluidounces of percolate, evaporate the remainder in a porcelain capsule at a temperature, usually, about 50 or 70 deg. C., to $1\frac{1}{2}$ fluidounces, add the reserved portion, and evaporate the liquid at or below the above-mentioned temperature either to pilular consistence or to dryness.

While the above process is a typical one for many extracts, the U. S. P. has many deviations from it. In many cases, the fluid extract is used to make the extract, thereby avoiding the preliminary extraction of the drug.

The U. S. P. directs that the drug may be extracted by the process of re-percolation or any other process that will exhaust the drug. (See Extracts, Fluid.)

About one-half of the extracts of the U. S. P. are evaporated to pilular consistence, the other half to dryness. To

the pilular extracts, the U. S. P. 1890 directed the addition of 10 per cent. by weight of glycerin while still warm to keep them in a permanently plastic condition. The U. S. P. 1880 directed but 5 per cent., which is probably quite sufficient. The present U. S. P. directs 10 p. c. in the preliminary portion of the book, but does not direct its use in only one of the formulas, viz., licorice, when 5 p. c. is specified.

Many of the dry extracts of the U. S. P. are directed to be reduced to fine powder and enough powdered peeled Russian licorice root added to establish a definite relationship between the finished extract and the drug. In the preliminary portion of the U. S. P., it is stated that dried and powdered marc of the same drug may be used for this purpose.

A new feature of the present U. S. P. is that many extracts are to be assayed.

According to the Germ. Pharm., the drug is to be extracted according to the method adapted to each case and the liquid is to be evaporated to extract consistency. Alcoholic liquids are to be evaporated at a temperature not exceeding 85 deg. C., ethereal liquids at a temperature not above 35 deg. C. When alcohol has been used in the menstruum, small amounts of alcohol should be added towards the end of the evaporation and the liquid stirred constantly. Extracts are either to be of the consistency of fresh honey, thick so that when cold they cannot be poured from the vessel, or dry when they may be rubbed to powder. Dry extracts are to be prepared by evaporating the liquid in a porcelain vessel on a steam or water bath to tough consistency, while warm removed from the dish, pulled into strings, and then dried at a gentle heat.

Dry narcotic extracts are to be prepared from the thick extracts by mixing 4 parts of the latter with 3 parts of finely-powdered licorice root, mixed thoroughly in a porcelain evaporating dish,

heated on a water bath until there is no further loss in weight, then rubbed to powder while still warm and enough finely-powdered licorice root added to make twice the weight of the extract originally employed.

Extracts, Fluid. (Called Fluidextracts by the U. S. P., 8th Revision.)

These are preparations which, according to the U. S. P. and N. F., represent 100 grams of drug in every 100 cubic centimeters of liquid, or, in other terms, 1 pint (16 fluidounces) of fluid extract contain the virtues of 16¾ av.ounces of drug.

There are a number of processes for making these preparations, all of them being more or less satisfactory, but all having some disadvantageous features. The process directed by the U. S. P. is known as "maceration and percolation" or as "simple percolation." The following is the general process, the kind of menstruum, and the quantity of percolate to be set aside as reserve being specified in each case:

16¾ av.ounces of drug in No. 60 powder are thoroughly moistened with 6½ fluidounces of menstruum, packed firmly in a cylindrical percolator, preferably of glass, and enough menstruum is poured on to completely saturate the powder and leave a stratum of liquid above it. When the liquid begins to drop from the percolator, close the lower orifice, and having closely covered the percolator to prevent evaporation, macerate for 48 hours. Then allow percolation to proceed slowly, gradually adding menstruum until the drug is exhausted. Reserve the first 11¼ to 14½ fluidounces of percolate and evaporate the remainder of the percolate at a temperature not exceeding 50 deg. C. to soft extract, dissolve this in the reserved portion, and add enough menstruum to make 16 fluidounces of product. If the menstruum in the course of making the fluid extract be changed, the second menstruum is the one added at the end

to make up the volume of 16 fluidounces. The evaporation of the weak percolate may be conducted in a still so as to recover the larger portion of the alcohol contained therein, then the evaporation may be completed in a porcelain capsule on a water bath at not above the specified temperature.

The U. S. P. also permits the use of the process of repercolation whenever practicable.

The fluid extracts of the N. F. are to be prepared according to one of the following two processes, the particular one to be employed being designated in each case. These two processes are necessary because, in the preparation of some fluid extracts, two menstrua are successively used, the first containing glycerin, and being in definite proportion to the drug used, while the second is free from glycerin, being intended for the exhaustion of the drug and subsequent evaporation. Accordingly these menstrua are designated as *menstruum I* (containing glycerin) and *menstruum II* (containing no glycerin). As an alternative to either of these processes, a third process, termed *fractional percolation*, may be used. In this the use of heat is avoided, and it involves the use of only one kind of menstruum, even in the case of drugs for which two different menstrua (I and II) are prescribed. In the case of the latter, a sufficient quantity of menstruum I must be prepared to serve throughout the process.

Process A. The Menstruum contains no Glycerin.

This is practically the same as the U. S. P. process, 14 fluidounces of percolate to be reserved for 16¾ av. ounces of drug, and the second percolate to be evaporated at a temperature sufficiently low to prevent loss of any important volatile constituent (the temperature directed by the U. S. P. should be preferred), the soft extract to be dissolved in enough menstruum so that when added to the reserve portion, the total will

measure 16 fluidounces. Allow the product to stand a few days, or longer, if convenient, and filter, if necessary.

Process B. The Menstruum contains Glycerin.

Moisten 16¾ av. ounces of the drug with a sufficient quantity of menstruum I to render it distinctly damp and to maintain it so after several hours' maceration in a well-covered vessel. When the drug has ceased to swell, pack it in a suitable percolator and pour the remainder of menstruum I on top. When this has just disappeared from the surface, follow it by a sufficient quantity of menstruum II. As soon as the percolate begins to drop from the orifice, close the latter, cover the percolator, and allow the contents to macerate during 24 (or better 48) hours. Then permit the percolation to proceed. Receive the first 13½ fluidounces of the percolate separately and set it aside. Then continue the percolation with menstruum II, until the drug is practically exhausted. Evaporate this second portion—at a temperature sufficiently low to prevent the loss of any important volatile constituent—to a soft extract, and dissolve this in a sufficient quantity of menstruum II, so that when this is added to the reserved portion, the product will measure 16 fluidounces. Allow the fluid extract to stand a few days, or longer, if convenient, and filter, if necessary.

Process C. Fractional Percolation.

Take of the drug, in powder of the prescribed fineness, 16¾ av. ounces and divide it into three portions of 8½, 5¼ and 3 av. ounces.

Moisten the first portion of the drug (8½ av. ounces) with the menstruum and percolate in the usual manner. Set aside the first 3 fluidounces of percolate, and continue until 24 fluidounces more of percolate have passed, which must be received in several portions, so that the more concentrated will be separate from the last, weak percolate.

Then moisten the second portion of

the drug (5¼ av. ounces) with the more concentrated percolates received during the preceding operation after the first 3 fluidounces have passed, and percolate again in the usual manner, using the several reserved percolates, successively, as menstrua. Set aside the first 5 fluidounces and continue the percolation until 10 fluidounces more have passed, which should also be received in several portions.

Finally moisten the third portion of the drug (3 av. ounces) with the most concentrated of the last reserved percolates, and proceed as directed for the second portion. Collect 8 fluidounces of percolate, and mix with the two portions (5 and 3 fluidounces) previously set aside, so as to make 16 fluidounces of fluid extract.

Note.—If this method is applied to drugs for which the Process B is directed, use a sufficient quantity of menstruum I to obtain the required quantities of percolate, and omit the use of menstruum II.

Manufacturing firms employ still other processes besides those described above.

The liquid extracts of the Brit. Pharm. are usually, though not in all instances, of the same strength as the fluid extracts of the U. S. P. and N. F. and are made by processes similar to those used in the latter.

According to the Germ. Pharm., fluid extracts are made by percolation, 100 parts by weight of product being made from 100 parts by weight of drug. The rate of flow of liquid is not to exceed more than 40 drops per minute. The first 85 parts by weight of percolate are to be reserved, percolation is to be continued until the drug is exhausted, this weak percolate is to be evaporated at a temperature which will avoid loss of active volatile constituents to thin extract, and then dissolved in enough menstruum to make 15 parts which is to be added to the reserved percolate.

Extract of Aconite.

Make according to the general process given under Extracts, which see, using alcohol as a menstruum, the drug being the root of aconite. The extract should be of pilular consistence.—N. F. Appendix and U. S. P. 1890.

Extract, Fluid, of Aconite.

Prepare according to the general process (see Extracts, Fluid) from the root, reserving 12¾ fluidounces as the first percolate (for 16¾ av. ounces of drug) and using as menstruum a mixture of 3 volumes of alcohol and 1 of water. The remainder of the percolate is to be evaporated, in a porcelain dish, at a temperature not exceeding 50 deg. C., to soft extract; dissolve this in the reserved portion and mix thoroughly. The product is to be assayed and made to contain 0.4 gram of aconitine in each 100 cc. If it contains more than this, enough menstruum is to be added to reduce it to this standard.—U. S. P.

Extract of Aconite Leaves.

Aconite leavesav.oz. 16
Alcoholfl.oz. 19
Diluted alcoholsufficient

Mix the drug with 6 fluidounces of alcohol, put into a percolator, add the remainder of the alcohol, then percolate with diluted alcohol to 20 fluidounces, and allow this percolate to evaporate spontaneously to 3½ fluidounces. Continue the percolation with diluted alcohol to get 40 fluidounces more of percolate or until the drug is exhausted. Evaporate this on a water bath, at not above 72 deg. C. to the consistence of syrup, add the other 3½ fluidounces, and then continue evaporation at not above 50 deg. C. to proper consistence.—U. S. P. 1870.

Extract, Fluid, of Adonis. (Fluid Extract of Bird's Eye or False Hellabore.)

From the root of *Adonis vernalis*.

Prepare according to Process A (see Extracts, Fluid), using the drug in No. 60 powder and alcohol as the menstruum.—N. F.

Extract of Aloes.

Aloesav.oz. 5
Water, boilingfl.oz. 48

Mix the aloes with the water in a suitable vessel, stirring constantly until the particles of aloes are thoroughly disintegrated, let the mixture stand for 12 hours, pour off the clear liquid, strain the residue, mix the liquids, and evaporate to dryness by means of a water or steam bath.—U. S. P.

The Brit. Pharm. recognizes an extract of barbadoes aloes which is to be prepared like the above, but the evaporation is to be conducted at a temperature not above 60 deg. C.

The extract of aloes of the Germ. Pharm. is made by dissolving 8 av. ounces of cape aloes in 38 fluidounces of boiling water, then adding another 38 fluidounces of water, setting aside for 2 days, decanting the liquid from the deposited resin, filtering the former and evaporating the filtrate to dryness.

Extract, Fluid, of Aloes.

What is commonly sold under this name is usually made by dissolving 8 av. ounces of aloes in 16 fluidounces of diluted alcohol by the aid of a moderate heat, straining, and evaporating the colature to 16 fluidounces.

To make the official tincture of aloes, it is directed to mix 3 fluidounces of the above with 3 fluidounces of fluid extract of licorice and 10 fluidounces of diluted alcohol.

Extract, Fluid, of Aloes and Myrrh.

This, like the fluid extract of aloes, is one of the "convenience" preparations put up by the large manufacturers. It may be prepared as follows:

Socotrine aloesav.oz. 4½
Myrrhav.oz. 4½
Alcoholsufficient

Mix the drugs is coarse powder with 12 fluidounces of alcohol, macerate for 7 days in a warm place, occasionally agitating, then heat moderately on a water bath for 2 hours, strain through flannel, add through the strainer enough

alcohol to make 16 fluidounces, and allow to cool.

To make the tincture of aloes and myrrh, the manufacturers direct that 5 fluidounces of this "fluid extract" be mixed with 11 fluidounces of alcohol. Inasmuch as the official preparation contains licorice, the tincture is not properly made unless 1½ fluidounces of the alcohol be replaced by fluid extract of licorice.

Extract, Fluid, of Asafetida, Ethereal.

Asafetida, broken into small piecesav.oz. 1
Stronger etherfl.oz. 3¾
Waterfl.dr. 3

Mix all in a well-stoppered bottle, macerate for 2 or 3 days, agitating occasionally, and strain.—Eclectic.

Extract, Fluid, of Australian Fever Bark. (Fluid Extract of Alstonia Constricta.)

Extract the bark in moderately fine powder by the use of alcohol as a menstruum, using the process of the U. S. P. or N. F., or any other suitable process of making fluid extracts.

Extract, Fluid, of Angelica Root.

Prepare according to Process A (see Extracts, Fluid), using the drug in No. 60 powder, and as menstruum a mixture of 3 volumes of alcohol with 2 of water.—N. F.

Extract of Apples, Ferrated. (Extractum Ferri Pomatum.—Extractum Pomi Ferratum.—Crude Malate of Iron.)

Iron, in the form of fine, bright wire, and cutgr. 140
Ripe sour applesav.oz. 16
Watersufficient

Convert the sour apples into a homogeneous pulp by pounding or grinding, and express the liquid portion. Then mix the latter with the iron in an enameled or porcelain vessel, macerate for 48 hours, and then apply the heat of a water bath, until no more bubbles of gas are given off, adding a little water from time to time to make up any loss by evaporation. Dilute the liquid with water to make it weigh 16 av.

ounces and set it aside for a few days. Then filter, and evaporate the filtrate in the before-mentioned vessel to a thick extract, which should be greenish-black, and should yield a clear solution with water.

This preparation contains about 6 per cent. of iron, calculated as metal.—N. F. and Germ. Pharm.

Extract, Fluid, of Arnica Flowers.

Prepare according to Process A (see Extracts, Fluid), using the drug in No. 40 powder, and diluted alcohol as the menstruum.—N. F.

Extract of Arnica Root.

Make according to the general process given under Extracts, which see, the menstruum being diluted alcohol, and obtaining an extract of pilular consistence.—N. F. Appendix and U. S. P. 1890.

Extract, Fluid, of Arnica Root.

Prepare according to the general process (see Extracts, Fluid), using as a menstruum a mixture of 3 volumes of alcohol and 1 of water.—N. F. Appendix and U. S. P. 1890.

Extract, Fluid, Aromatic.

Prepare from aromatic powder according to the general process (see Extracts, Fluid), using alcohol as a menstruum, moistening 16¾ av. ounces of drug with 5½ fluidounces of menstruum and reserving 13½ fluidounces as the first percolate. The remainder of the percolate is to be evaporated at a temperature not above 50 deg. C.—U. S. P.

Extract, Fluid, of Bamboo Brier, Compound. (Alterative Compound.—McDade's Compound.—Creek Indian Remedy.—Mistura Smilacis Compositus.)

Bamboo brier rootav.oz. 4
Stillingiaav.oz. 4
Burdock rootav.oz. 4
Poke rootav.oz. 4
Prickly ash barkav.oz. 1
Diluted alcoholsufficient

Mix the drugs, reduce to fine powder, and extract, using diluted alcohol as a menstruum, by the process of the U. S. P. or N. F., or any other suitable proc-

ess for fluid extracts, the product to measure 16 fluidounces.

Extract, Fluid, of Barberry.

From the bark of the root of *Berberis vulgaris*.

Prepare according to Process A (see Extracts, Fluid), using the drug in No. 60 powder, and a mixture of 3 volumes of alcohol and 2 of water as a menstruum.—N. F. (1st edition).

Extract, Fluid, of Bearsfoot. (Fluid Extract of Polymnia.)

Extract the root in moderately fine powder by any suitable process for fluid extracts, using alcohol as the menstruum.

Extract of Belladonna.

Sprinkle 16 av. ounces of fresh belladonna herb in blossom with 6 fluidrams of water, contuse and express. Moisten the residue with 18 fluidrams of water, contuse again, and express. Mix the two liquids, heat on a water bath to 80 deg. C., strain, evaporate on a water bath to 1½ av. ounces, and add 2 fluidounces of alcohol. Allow to stand for 24 hours, agitating frequently, strain, mix the residue with 6 fluidrams of alcohol and 2 of water, warm this for a short time, in a closed vessel, agitating repeatedly, allow to stand, decant the clear liquid; add it to the first alcoholic liquid, filter, and evaporate the filtrate on a water bath to thick extract.—Germ. Pharm.

For U. S. P. extract of belladonna, see extract of belladonna leaves.

Extract of Belladonna, Alcoholic. (Extract of Belladonna Root.)

Evaporate one fluidounce of liquid extract of belladonna (see Extract, Fluid, of Belladonna) in a tared porcelain capsule, on a water bath, to the consistence of a moderately firm extract, and weigh. Subtract the weight, in grains, of the extract obtained from 340 grains; the difference indicates the amount of milk sugar to be used as a diluent for each fluidounce of liquid extract to make the extract.

Now evaporate 8 fluidounces of the

liquid extract to a thin syrup, add to it the requisite quantity of milk sugar as determined from the data obtained from the foregoing experiment, and continue the evaporation until the extract weighs 6¼ av. ounces.—Brit. Pharm.

The extract of the Brit. Pharm. 1885 contained no milk sugar and average samples of it were about the strength of the extract of the present Brit. Pharm.

Extract of Belladonna, Green.

Bruise the fresh leaves and young branches in a mortar (stone, marble or wedgewood, not metal), press out the juice and heat it to 55 deg. C. Separate the green coloring matter by straining through cloth, heat the strained liquid to 95 deg. C., and filter. Evaporate the filtrate on a water bath to the consistence of thin syrup; add to this the green coloring previously separated and passed through a hair sieve, stir the whole well together, and evaporate at a temperature not exceeding 55 deg. C. to the consistence of soft extract.

At a temperature of 55 deg. C., the chlorophyll is coagulated; at 95 deg. C., the albumen is coagulated. The latter is filtered out and rejected; the former is reincorporated with the extract, and the product will be bright green in color. Towards the end of the evaporation, the extract must be stirred constantly and vigorously so that the chlorophyll will be in intimate mixture with the extract.—Brit. Pharm.

The above may be used as a general process for making the so-called "green" or "English extracts."

For the extract of belladonna, Germ. Pharm., also made from fresh herb, see Extract of Belladonna.

Extract of Belladonna Leaves.

I. Make according to the general process for extracts (see Extracts), using a mixture of 2 volumes of alcohol and 1 of water as a menstruum. Conduct the evaporation at a temperature not to exceed 50 deg. C.—U. S. P.

The product is to be assayed and is to contain 1.4 per cent. of mydriatic alkaloids. If found to contain more than this percentage, enough powdered sugar of milk should be added to reduce it to the standard of 1.4 per cent.

The Brit. Pharm. recognizes a green extract of belladonna (leaves) and an alcoholic extract of belladonna (root), which see. The Brit. Form. recognizes an extract of belladonna leaf; see No. II.

See also Extract of Belladonna.

II. Extract belladonna leaf in No. 60 powder with 90 per cent alcohol by percolation until exhausted, distil off most of the alcohol from the percolate, and evaporate the residue on a water bath to the consistence of an extract.—Brit. Form.

This extract is to be assayed.

Extract, Fluid, of Belladonna Root.
(Fluid Extract of Belladonna U. S. P. 1880.)

Prepare according to the general process (see Extracts, Fluid), moistening 16¾ av. ounces of drug with 5½ fluid-ounces of menstruum and collecting the first 12¾ fluidounces of percolate as the reserve. The menstruum is a mixture of 4 volumes of alcohol and 1 of water. The second percolate is to be evaporated at not above 50 deg. C. to soft extract and dissolved in the reserved percolate. The product is to be assayed and made to contain ½ gram of mydriatic alkaloids in 100 cc. If it contains more, enough menstruum should be added to reduce it to this standard.—U. S. P.

The liquid extract of belladonna of the Brit. Pharm. is made by extracting belladonna root in No. 20 powder by repercolation with a mixture of 7 volumes of alcohol and 1 of water, and standardizing the product so that every 110 minims of liquid extract contains ¾ gr. of alkaloids (or 100 cc. contain 0.75 gm.).

Extract, Fluid, of Benzoin. (Concentrated Tincture of Benzoin.)

Benzoin, coarse powder...av.oz. 8½
Alcoholsufficient

Mix the benzoin with 12 fluidounces of alcohol, macerate the mixture in a warm place, then heat on a water bath until quite warm, strain through flannel, and wash the dregs and strainer with enough alcohol to make the colature measure 16 fluidounces.

This is similar to the "convenience" preparations put up by manufacturers. The tincture is directed to be prepared from it by mixing 6 fluidounces of it with 10 fluidounces of alcohol. It may be used for making benzoinated lard and for benzoinating other fats and fatty bodies.

Extract, Fluid, of Benzoin, Compound.

Benzoinav.oz. 4½
Storaxav.oz. 3
Tolu balsamav.oz. 1½
Aloesgr. 325
Alcoholsufficient

Reduce the benzoin and aloes to coarse powder, add these and the tolu and storax to 12 fluidounces of alcohol contained in a closed vessel, digest the mixture, at a temperature not exceeding 65 deg. C., for 2 hours, then strain through flannel, and wash the residue and strainer with enough alcohol to make the colature measure 16 fluidounces.

This is another "convenience" preparation from which the compound tincture of benzoin is directed to be prepared by mixing 6 fluidounces with 10 fluidounces of alcohol.

Extract, Fluid, of Berberis. (Fluid Extract of Berberis Aquifolium or Oregon Grape.)

Prepare according to the general process (see Extracts, Fluid), using diluted alcohol as the menstruum. Reserve the first 11¼ fluidounces of percolate (for every 16¾ av. ounces of drug used).—U. S. P.

Extract, Fluid, of Bethroot. (Fluid Extract of Trillium.)

From the rhizome of *Trillium erectum* and other species of *Trillium*.

Prepare according to Process A (see Extracts, Fluid), using the drug in No. 40 powder, and a mixture of 3 volumes of alcohol and 2 of water as the menstruum.—N. F.

Extract of Bittersweet. (Extract of Dulcamara.)

Dulcamara, coarse powder. av.oz. 4
Distilled water fl.oz. 24

Mix the drug with 16 fluidounces of water, macerate for 24 hours, strain with expression, upon the residue pour 8 fluidounces of boiling distilled water, macerate for 1 hour, and strain and express once more. Mix the two colatures, add 2 drams or so of filter paper torn into shreds—scraps of filter paper from the cutting of filter papers may be used—and heat the liquid to boiling. Now skim the liquid, filter it through flannel, and evaporate to extract consistency.

A preparation that will keep better may be prepared by evaporating the strained liquid after boiling to a weight of 2 av. ounces, adding to the latter 2 fluidounces of alcohol, mixing well, allowing to stand for 48 hours, filtering, passing through the residue on the filter a mixture of 6 fluidrams of alcohol and 2 of water, and evaporating the total filtrate to extract consistency.—D. modified.

The alcohol separates the mucilage extracted from the drug.

Extract, Fluid, of Bittersweet. (Fluid Extract of Dulcamara.)

Prepare according to the general process (see Extracts, Fluid). The menstruum is diluted alcohol.—N. F. Appendix and U. S. P. 1890.

Extract, Fluid, of Blackberry Root. (Fluid Extract of Rubus.)

Prepare according to the general process (see Extracts, Fluid), by moistening 16¾ av. ounces of it with 5½ fluidounces of menstruum, reserving

the first 12¾ fluidounces of percolate, and evaporating the remainder on a water bath. The menstruum is diluted alcohol.—U. S. P.

Extract, Fluid, of Blackberry Root Bark, Compound.

Blackberry root bark.....av.oz. 12
Cinnamonav.oz. 1½
Nutmegav.oz. 1½
Cloveav.oz. ¾
Pimentoav.oz. ¾
Diluted alcoholsufficient

Mix the drugs, grind to fine powder, and extract, using diluted alcohol as a menstruum, by the process of the U. S. P. or N. F., or any other suitable process for fluid extracts, the product to measure 16 fluidounces.

Other spices may be used instead of those in the above formula.

Such a preparation may be employed for making mild and pleasant carminative elixirs, syrups, "balsams," etc., for summer complaint, dysentery, etc. The above may be converted into the aromatic syrup of blackberry, N. F., by mixing 1 fluidounce with 5 of diluted alcohol, 11 fluidounces of blackberry juice, and 16 av. ounces of sugar, agitating until dissolved and straining. A syrup without juice may be prepared by mixing 1 fluidounce of fluid extract, 5 of diluted alcohol and 20 of simple syrup.

Extract of Black Cohosh. (Extract of Cimicifuga.)

Evaporate 4 fluidounces of the fluid extract in a porcelain dish by means of a water bath, at a temperature not exceeding 70 deg. C., with constant stirring, to complete dryness. Reduce the product to fine powder and add enough peeled Russian licorice root in No. 80 powder to make the finished extract weigh 1 av. ounce.—U. S. P.

Extract, Fluid, of Black Cohosh. (Fluid Extract of Cimicifuga, or Actæa Racemosa.)

Prepare according to the general process (see Extracts, Fluid), by moistening 16¾ av. ounces of drug with 4 fluidounces, reserving the first 14½

fluidounces of percolate, and evaporating the second percolate on a water bath. The menstruum is alcohol.—U. S. P.

The liquid extract of black cohosh of the Brit. Pharm. is made with the same menstruum.

Extract, Fluid, of Black Cohosh, Compound.

Black cohoshav.oz. $8\frac{3}{4}$
Wild cherryav.oz. $4\frac{1}{2}$
Licoriceav.oz. $2\frac{1}{4}$
Ipecacav.oz. I
Senegaav.oz. I
Diluted alcoholsufficient

Mix the drugs, reduce to fine powder, and extract, using diluted alcohol as a menstruum, by the process of the U. S. P. or N. F., or any other suitable process for fluid extracts, the product to measure 16 fluidounces.

Extract, Fluid, of Black Haw. (Fluid Extract of Viburnum Prunifolium.—Fluid Extract of Viburnum, U. S. P. 1880.)

Prepare according to the general process (see Extracts, Fluid), but reserving the first $13\frac{1}{2}$ fluidounces of percolate from $16\frac{3}{4}$ av. ounces of drug. The menstruum is a mixture of 2 volumes of alcohol and 1 of water.—U. S. P.

Extract of Bladder-Wrack. (Extract Sea-Wrack, Fucus or Fucus Vesiculosus.)

Exhaust the drug in No. 20 powder by percolation, using diluted alcohol as the menstruum. Recover the alcohol from the percolate by distillation and evaporate the residue to the consistence of a firm extract.—Brit. Form.

Extract, Fluid, of Bladder-Wrack. (Fluid or Liquid Extract of Sea-Wrack, Fucus or Fucus Vesiculosus.)

I. Prepare according to Process A (see Extracts, Fluid), using the drug in No. 40 powder, and a mixture of 3 volumes of alcohol and 1 of water as the menstruum.—N. F.

II.

Extract of bladder-wrack.av.oz. $3\frac{1}{4}$
Diluted alcohol, to make....f.oz. 16
Dissolve the extract in 13 fluidounces

of diluted alcohol, let stand for an hour, filter, and wash the residue on the filter with the remainder of the diluted alcohol.—Brit. Form.

Extract of Blessed Thistle. (Extract of Carduus Benedictus.)

Blessed thistle, cut.....av.oz. 8
Water, boilingf.oz. 61

Pour on the drug 38 fluidounces of boiling water, let stand for 6 hours at 35 to 40 deg. C., agitate occasionally, express, add the remainder of the water to the residue, macerate again for 3 hours, again express, mix the two liquids, evaporate till it weighs 15 av. ounces, when cold add $8\frac{1}{2}$ fluidounces of alcohol, set aside in a cool place for 2 days, filter, and evaporate the filtrate to thick extract.—Germ. Pharm.

Extract, Fluid of Blood Root. (Fluid Extract of Sanguinaria.)

Prepare according to the general process (see Extracts, Fluid), moistening $16\frac{3}{4}$ av. ounces of the drug with 5 fluidounces of menstruum and reserving the first $13\frac{1}{2}$ fluidounces of percolate. The menstruum is a mixture of 11 volumes of 36 per cent. acetic acid and 25 volumes of water.—U. S. P.

In the U. S. P. 1890, the preparation was made with a mixture of 3 volumes of alcohol and 1 of water.

Extract, Fluid, of Blue Cohosh. (Fluid Extract of Caulophyllum.)

Prepare according to Process A (see Extracts, Fluid), using the drug in No. 60 powder, and a mixture of 3 volumes of alcohol and 1 of water as the menstruum.—N. F.

Extract of Blue Flag. (Extract of Iris.)

Prepare according to the general process (see Extracts), using alcohol as a menstruum, and obtaining an extract of pilular consistence.—N. F. Appendix and U. S. P. 1890.

Extract, Fluid, of Blue Flag. (Fluid Extract of Iris.)

Prepare according to the general process (see Extracts, Fluid). The mens-

trum is alcohol.—N. F. Appendix and U. S. P. 1890.

Extract, Fluid, of Boldo.

From the leaves of *Peumus Boldus*.

Prepare according to Process A (see Extracts, Fluid), using the drug in No. 60 powder, and a mixture of 2 volumes of alcohol and 1 of water as a menstruum.—N. F.

Extract, Fluid, of Boneset. (Fluid Extract of Thoroughwort or Eupatorium.)

Prepare according to the general process (see Extracts, Fluid), but using the drug in No. 40 powder, reserving the first 13 fluidounces of percolate (for 16¾ av. ounces of drug), and evaporating the remainder on a water bath. The menstruum is diluted alcohol.—U. S. P.

Extract, Fluid, of Broom. (Fluid Extract of Scoparius.)

Prepare according to the general process (see Extracts, Fluid). The menstruum is diluted alcohol.—N. F. Appendix and U. S. P. 1890.

Extract, Fluid, of Bryony.

Moisten 16¾ av. ounces of drug in moderately fine powder with 3 fluidounces of water. Allow to stand in a covered vessel for one hour, then mix intimately with 6 fluidounces of alcohol, let stand for another hour, then exhaust by any suitable process for fluid extracts (see Extracts, Fluid), using a menstruum composed of 3 volumes of alcohol to 2 of water.

Extract, Fluid, of Buchu.

Prepare according to the general process (see Extracts, Fluid), the first 13½ fluidounces of percolate (from 16¾ av. ounces of drug), and evaporating the balance of the percolate on a water bath at a temperature not exceeding 50 deg. C. The menstruum is a mixture of 1 volume of water and 3 of alcohol.—U. S. P.

Extract, Fluid, of Buchu, Compound.

Buchuav.oz. 10½
Cubebav.oz. 2, gr. 35
Juniper berries.....av.oz. 2, gr. 35

Uva ursiav.oz. 2, gr. 35
Alcohol, water, each.....sufficient

Mix the drugs and reduce to No. 40 powder. Prepare the fluid extract according to Process A (see Extracts, Fluid), using a mixture of 2 volumes of alcohol and 1 of water as the menstruum, the above mixture of drugs to make 16 fluidounces of product.—N. F.

Most of the preparations of the above name which are on the market represent, in each pint, 8 av. ounces of buchu, 2 av. ounces each of cubeb, juniper and uva ursi, and 2 fluidounces of spirit of nitrous ether.

Extract, Fluid, of Buchu, Juniper and Potassium Acetate, Comp'd.

Buchuav.oz. 12½
Juniperav.oz. 3
Potassium acetateav.oz. 1
Alcohol, water, each.....sufficient

Mix the buchu and juniper, reduce them to tolerably fine powder, and extract by the process of the U. S. P. or N. F. (see Extracts, Fluid). The menstruum should consist of 2 volumes of alcohol to 1 of water. The percolate, after dissolving the potassium acetate in it, should measure 16 fluidounces.

Extract, Fluid, of Buchu and Pareira.

Mix buchu leaves and cut pareira in equal parts, reduce to fine powder, and extract by the process of the U. S. P. or N. F. (see Extracts, Fluid), using as menstruum composed of 2 volumes of alcohol and 1 of water.

Extract, Fluid, of Buchu, Pareira and Uva Ursi.

Make like the preceding, using 8½ av. ounces of buchu and 4¼ av. ounces of each of pareira and uva ursi, the product to measure 16 fluidounces.

Extract of Buckbean. (Extractum Trifolii Fibrini.)

Buckbean, cut moderately
fineav.oz. 16
Alcoholfl.oz. 18¼
Water, boilingsufficient

Macerate the drug with 77 fluidounces of the water for 6 hours, agitating occasionally, express, macerate the residue with 46 fluidounces more of the

water for 3 hours, express again, mix the two liquids, evaporate to a weight of 32 av. ounces, when cold add the alcohol, set aside in a cool place for 2 days, filter, and evaporate the filtrate to thick extract.—Germ. Pharm.

Extract, Fluid, of Buckbean. (Fluid Extract of Menyanthes.)

From the leaves of *Menyanthes trifoliata* (*Trifolium fibrinum*, Germ. Pharm.).

Prepare according to Process A (see Extracts, Fluid), using the drug in No. 20 powder, and diluted alcohol as the menstruum.—N. F.

Extract of Buckthorn. (Extract of Frangula.)

I.

Buckthorn bark, coarse
powderav.oz. 8
Diluted alcoholfl.oz. 20
Watersufficient

Mix the bark and diluted alcohol, macerate for 48 hours in a closed vessel, pack in a percolator, allow the liquid to drain, and then pass enough water through the drug to make the percolate measure 30 fluidounces. Evaporate this percolate on a water bath to thick extract consistency.—Brit. Pharm. 1885.

II.

Frangula, moderately coarse
powderav.oz. 4
Waterfl.oz. 24

Mix the drug with 16 fluidounces of water, macerate for 24 hours, strain with expression, upon the residue pour 8 fluidounces of boiling water, macerate again for 1 hour, strain and express, mix the two liquids, and evaporate to dryness.—D.

Extract, Fluid, of Buckthorn. (Fluid Extract of Frangula.)

Prepare according to the general process (see Extracts, Fluid), but using the drug in No. 40 powder, moistening 16¾ av. ounces of it with 5½ fluidounces of menstruum, reserving the first 13 fluidounces of percolate, and evaporating the remainder on a water bath. The mens-

truum is a mixture of 5 volumes of alcohol and 8 of water.—U. S. P.

The fluid extract of the Germ. Pharm. is made with a mixture of 1 volume of alcohol and 2 of water.

The Germ. Pharm. directs making 100 parts by weight of fluid extract from 100 parts of drug, using a mixture of 1 volume of alcohol and 2 of water as a menstruum.

Extract, Fluid, of Buckthorn, Bitterless. (Extractum Frangulae Examaratæ Fluidum.)

Bitterless buckthorn bark.av.oz. 16¾
Alcohol, water, each.....sufficient

Extract the bark by the process of the U. S. P. or N. F., or any other suitable process for fluid extracts. The menstruum should consist of a mixture of 3 volumes of alcohol to 1 of the water, the product should measure 16 fluidounces.

Bitterless buckthorn bark is prepared by intimately mixing 10 av. ounces of buckthorn bark in very fine powder and 1 av. ounce of calcined magnesia with 20 fluidounces of water, allowing to stand for 12 hours, drying on a water bath with constant stirring, powdering again, and sifting.—D.

Extract, Fluid, of Blackthorn.

Palatable.

Fluid extract of buckthorn,
U. S. P.....fl.oz. 16
Ammoniated glycyrrhizin...gr. 120
Saccharingr. 30
Solution of potassa.....fl.dr. 2
Waterfl.oz. 2

Dissolve the saccharin and glycyrrhizin in the water to which has been added the solution of potassa, the fluid extract of buckthorn, and mix thoroughly. The result is an elegant product, free from nauseating or disagreeable taste.

This product is, of course, somewhat weaker than a fluid extract is supposed to be.

Extract, Fluid, of Burdock. (Fluid Extract of Lappa or Burdock Root.)

Prepare according to the general proc-

ess (see Extracts, Fluid). The menstruum is diluted alcohol.—U. S. P. 1890.

Extract of Butternut-bark. (Extract of Juglans.)

Prepare according to the general process (see Extracts), but using the drug in No. 30 powder and evaporating the percolate on a water bath to pilular consistence. The menstruum is diluted alcohol.—N. F. Appendix and U. S. P. 1890.

Extract, Fluid, of Butternut. (Fluid Extract of Juglans.)

From the inner bark of *Juglans cinerea*.

Prepare according to Process A (see Extracts, Fluid), using the drug in No. 40 powder, and diluted alcohol as the menstruum.—N. F.

Extract, Fluid, of Cactus Grandiflorus. (Fluid Extract of Cereus Grandiflorus.)

The preparation sold under this name is usually a concentrated tincture, made from the freshly gathered fleshy stems, leaves and flowers, which are crushed, covered with alcohol, and macerated for 2 weeks, then expressed and filtered. Three species of plants are now generally employed indiscriminately in making this preparation, viz., *Cereus grandiflorus*, *C. Bonplandi* and *C. McDonaldi*.

Extract of Calabar Bean. (Extract of Physostigma.)

I. Prepare according to the general process (see Extracts), using the drug in No. 80 powder. The menstruum is alcohol. The liquid is to be evaporated to dryness at a temperature not exceeding 50 deg. C. The product is to be assayed and made to contain 2 per cent. of ether: soluble alkaloids. If it contains more, enough peeled Russian licorice root in No. 80 powder is to be added to it to reduce it to this percentage. Then reduce to powder, mix well, and transfer at once to well-stoppered amber-colored vials.—U. S. P.

II.

Calabar bean, No. 40 powderav.oz. 16

Alcoholfl.oz. 76
Milk sugarsufficient

Mix the drug with 10 fluidounces of alcohol, set aside in a closed vessel for 48 hours, agitating occasionally, transfer to a percolator, and when the liquid ceases to pass, add the remainder of the alcohol so that it may slowly percolate through the drug. Remove the marc from the percolator, subject it to pressure, add the expressed liquid to the percolate, filter, recover most of the alcohol by distillation, transfer the residue to a tared porcelain capsule, evaporate to the consistence of very soft extract, weigh, add three times its weight of milk sugar, and mix thoroughly.—Brit. Pharm.

The extract of the Brit. Pharm. 1885 contained no milk sugar and hence was 4 times as strong as the extract of the present Brit. Pharm.

Extract of Calamus. (Extract of Sweet Flag.)

Calamus, cut fine.....av.oz. 4
Alcohol, water, each.....sufficient

Mix the drug with 9¼ fluidounces of alcohol and 11½ of water, macerate for 4 days, agitating occasionally, and strain with expression. To the residue, add 4½ fluidounces of alcohol and 5¾ of water, macerate for 24 hours, and strain with expression. Mix the two liquids, heat on a water bath, set aside for 2 days, filter, and evaporate the filtrate to thick extract.—Germ. Pharm.

Extract, Fluid, of Calamus. (Fluid Extract of Sweet Flag.)

Prepare according to the general process (see Extracts, Fluid), moistening 16¾ av. ounces of drug with 5½ fluidounces of menstruum receiving the first 14½ fluidounces of percolate as the reserve, and evaporating the weak percolate on a water bath at not above 50 deg. C. The menstruum is a mixture of 3 volumes of alcohol and 1 of water.—U. S. P.

Extract, Fluid, of Calendula. (Fluid Extract of Marigold.)

From the flowering herb of *Calendula officinalis*.

Prepare according to Process A (see Extracts, Fluid), using the drug in No. 40 powder, a mixture of 2 volumes of alcohol and 1 of water as the menstruum.—N. F.

Extract, Fluid, of Calendula, Non-Alcoholic.

Calendula (flowering herb)

No. 40 powder.....av.oz. 16¾

Glycerinf.oz. 8

Alcohol, water, each.....sufficient

Moisten the drug with a menstruum composed of 2 volumes of water and 1 of alcohol, and macerate for 12 hours. Percolate to exhaustion with same menstruum, recover the alcohol by distillation, then evaporate carefully to 8 fluidounces, and add the glycerin.

Extract, Fluid, of Canadian Hemp. (Fluid Extract of Black Indian Hemp or Apocynum or Apocynum Cannabinum.)

Prepare according to the general process (see Extracts, Fluid), using as a first menstruum, for 16¾ av. ounces of drug, a mixture of 13 fluidrams of glycerin, 9¾ fluidounces of alcohol and 4¾ fluidounces of water, to be followed by a mixture of 3 volumes of alcohol and 2 of water. The weak percolate is to be evaporated at not above 50. deg. C.—U. S. P.

Extract of Cannabis Indica. (Extract of Indian Cannabis or Indian Hemp.)

Moisten 16¾ av. ounces of drug in No. 20 powder with 5 fluidounces of alcohol, and pack it firmly in a cylindrical percolator, then add enough alcohol to saturate the powder and leave a stratum above it. When the liquid begins to drop from the percolator, close the lower orifice and, having closely covered the percolator, macerate for 48 hours. Then allow percolation to proceed, gradually adding alcohol, until the drug is exhausted. Distil off the alcohol from the percolate by means of a water bath, and evaporate the residue in a porcelain dish, on a water bath, to pilular consistence.—U. S. P.

The preparation of the Brit. Pharm.

differs from this only in being evaporated to soft extract.

Extract of Cannabis Indica, Alcoholic or Resinous. (Cannabin of T. & H. Smith.)

Digest the drug in successive quantities of warm water till the expressed liquid comes away colorless, and again for 2 days, at a moderate heat, in a solution of sodium carbonate in the proportion of 1 part of salt to 2 of drug; coloring matter, chlorophyll, and inert concrete oil are thereby removed. Express and wash the residue, dry it, and exhaust it by percolation with alcohol. Agitate the percolate with milk of lime containing 1 av. ounce of lime for every av. pound of drug, filter, and to the filtrate add a small amount of sulfuric acid to precipitate the excess of lime. Also add a little animal charcoal, again filter, from the filtrate distil most of the alcohol, to the residue, contained in a porcelain capsule, add twice its weight of water, and allow the remaining alcohol to be dissipated by spontaneous evaporation. Collect the resin and wash it with water until the washings are neither acid nor bitter, and dry the resin in thin layers.

Extract, Fluid, of Cannabis Indica. (Fluid Extract of Indian Cannabis or Indian Hemp.)

Prepare according to the general process (see Extracts, Fluid), but using the drug in No. 30 powder, reserving the first 14½ fluidounces of percolate (from 16¾ av. ounces of drug), and evaporating the remainder on a water bath at not above 50 deg. C. The menstruum is alcohol.—U. S. P.

Extract, Fluid, of Capsicum.

Prepare according to the general process (see Extracts, Fluid), but moistening 16¾ av. ounces of drug with 8 fluidounces of menstruum, reserve the first 14½ fluidounces of percolate, and evaporate the remainder on a water bath. The menstruum is alcohol.—U. S. P.

Extract, Fluid, of Cardamom, Compound.

What is commercially sold under this title may be made as follows:

Cardamom, without capsules	av.oz.	3¼
Cassia cinnamon	av.oz.	3¼
Caraway	av.oz.	1¾
Cochineal	gr.	290
Diluted alcohol	sufficient	

Grind the drugs to moderately fine powder, and extract with diluted alcohol (see Extracts, Fluid), so as to obtain 16 fluidounces of product.

This process is ten times the strength of the official tincture, which may be prepared by mixing 1 fluidounce of this with ½ fluidounce of glycerin, and 8½ fluidounces of diluted alcohol.

Extract of Cascara Sagrada.

I. Prepare according to the general process given under Extracts. In this case 16 av. ounces of drugs in No. 60 powder is to be exhausted with a mixture of 1 volume of alcohol and 7 of water. The first 14 fluidounces of percolate are to be reserved, the remainder is to be evaporated on a water bath not exceeding 70 deg. C. to the consistence of syrup. This is to be mixed with the reserved portion, and the whole liquid is to be evaporated at the same temperature to dryness. Reduce the extract to fine powder and add enough peeled Russian licorice root in No. 80 powder to make the whole weigh 4 av. ounces.—U. S. P.

II. Moisten the drug, in No. 20 powder, with water, let it remain a few hours to soften and swell, then place it loosely in a percolator, and percolate with water until the drug is exhausted. Evaporate on a water bath to dryness.—Brit. Pharm.

III.

Cascara sagrada, No. 20 powder,
Alcohol, water, each.....sufficient

Take any suitable quantity of the bark, moisten with a mixture of 3 parts of alcohol and 4 of water, then pack in a percolator, moisten, and percolate in

the usual manner until the drug is exhausted; then evaporate the percolate on a water bath either to thick consistency or to dryness as may be desired.

The yield of pilular extract is about 28 per cent., of dry extract, about 24 per cent.—D. modified.

Extract, Fluid, of Cascara Sagrada.

I. Prepare according to the general process (see Extracts, Fluid), reserving the first 13 fluidounces of percolate from 16¾ av. ounces of drug, and evaporating the remainder on a water bath. The menstruum is a mixture of 2 volumes of alcohol and 3 of water.—U. S. P.

The fluid extract of cascara sagrada of the market varies greatly. Some brands are sweetened, either with saccharine or sugar, some contain licorice extract.

A formula recommended for making this fluid extract is to exhaust 16 av. ounces of the drug by passing water through it, evaporating the percolate on a water bath to 12 fluidounces, adding 3 fluidounces of alcohol and 1 fluidounce of glycerite of licorice, and filtering, if necessary.

II. Brit. Pharm. formula for liquid extract of cascara sagrada:

Cascara sagrada	av.oz.	16¾
Diluted alcohol	fl.oz.	6½
Distilled water	sufficient	

Moisten the drug with 12 fluidounces of distilled water. set the mixture aside for 6 hours, then place it loosely in a percolator, and percolate with more water until the drug is exhausted. Evaporate the percolate to 9½ fluidounces, and add the diluted alcohol.

Extract, Fluid, of Cascara Sagrada, Aromatic. (Cascara Aromatic.)

The bitterness of cascara sagrada is removed by means of an insoluble alkali such as lime or magnesia; the taste of the preparation is further improved by adding sugar, saccharin, licorice, and flavoring oils and spirits. The following formulas are all excellent:

I.

Cascara sagrada, fine powder	av.oz. 16¾
Licorice root, fine powder	av.oz. 1¾
Calcined magnesia	av.oz. 2
Glycerin	fl.oz. 4
Compound spirit of orange	fl.dr. 1¼
Alcohol	fl.oz. 8
Water, diluted alcohol, each	sufficient

Mix the powdered drugs and the magnesia with 32 fluidounces of water; macerate for 12 hours and then dry the mixture on a water bath at a gentle heat. Mix the glycerin and the alcohol with 4 fluidounces of water, and percolate the dried powders with this menstruum, followed by diluted alcohol. Reserve the first 13 fluidounces that pass, and set this aside. Continue the percolation with diluted alcohol until the drug is exhausted, evaporate this second portion of percolate to soft extract, dissolve it in the reserved portion, and add the compound spirit of orange and enough diluted alcohol to make 16 fluidounces.—U. S. P.

II. N. F. (which calls it Bitterless

Fluid Extract of Cascara Sagrada):

Cascara sagrada, fine powder	av.oz. 16¾
Quicklime	gr. 360
Sugar	av.oz. 7
Oil of coriander	drops 10
Oil of anise	drops 6
Water	sufficient

Slake the lime, add 32 fluidounces of water, stir in the drug, and digest on a water bath for 6 hours, or until the bitter taste has become faint. Pack the magma into a percolator, allow it to drain, then percolate with water until the drug is exhausted. Evaporate the percolate to 12 fluidounces, dissolve the sugar in this liquid, and then add the oils, shake well, filter if necessary and add enough water to make 16 fluidounces.

This preparation is said to keep well, even though it contains no alcohol. The flavor may be varied by adding oil of cinnamon, wintergreen, fennel, etc. Licorice may be added either by mixing

the ground root with the drug or by incorporating extract or glycerite with the evaporated liquid.

III. Steven's process:

Cascara sagrada, No. 40 powder	av.oz. 17½
Calcined magnesia	av.oz. 1¾
Water	fl.oz. 18
Alcohol	fl.oz. 13
Glycerin	fl.oz. 4
Extract of licorice, purified	av.oz. 4¼
Saccharin	gr. 30
Oil of fennel	drops 5
Diluted alcohol	sufficient

Mix the first two ingredients very intimately, moisten with water and macerate for several hours. Then pack the mixture in a percolator and allow to macerate about 48 hours; then add the alcohol and allow to macerate 12 hours longer. Now start percolation with diluted alcohol and continue until the drug is exhausted. The percolation should be allowed to go on very slowly at first, the heavier portion being reserved to the amount of about 13 fluidounces and the remainder in succession to about 16 fluidounces. Recover the alcohol, commencing with the most dilute of the liquors, and evaporate until the whole is reduced to 12 fluidounces, including the glycerin; to this product add the extract of licorice, saccharin and oil of fennel, the whole to measure 16 fluidounces. If the total volume falls short of 16 fluidounces, add enough diluted alcohol.

This process may be varied slightly as follows: Evaporate the percolate to 8 fluidounces (without the glycerin), and add 8 fluidounces of glycerite of licorice, the saccharin and oil.

IV. Urban's process (recommended by Hemm):

Cascara sagrada, No. 60 powder	av.oz. 16¾
Licorice root, No. 40 powder	av.oz. 2½
Freshly slaked lime	av.oz. 1¾
Compound spirit of orange	m. 100
Solution of saccharin	fl.oz. 1
Alcohol	fl.oz. 8
Glycerin	fl.oz. 4
Water, diluted alcohol, each	sufficient

Mix the freshly slaked lime with the cascara sagrada and licorice root, add 16 fluidounces of water, mix thoroughly, pass through a No. 20 sieve, macerate for 24 hours, and dry at a temperature of 40 to 50 deg. C. Mix the alcohol and glycerin with 4 fluidounces of water, moisten the drugs with 6½ fluidounces of this menstruum and then extract in the usual manner for fluid extracts, using diluted alcohol as a menstruum after the above liquid has all been added to the drugs. Reserve the first 13½ fluidounces of percolate, evaporate the remainder to soft extract, dissolve the latter in reserve percolate, add the solution of saccharin and the spirit and then enough diluted alcohol to make 16 fluidounces; filter after several days, if necessary.

V. This preparation may also be prepared from the bitterless fluid extract of cascara sagrada by the addition of extract or glycerite of licorice and aromatics.

Extract, Fluid, of Cascara Sagrada.
Bitterless or Tasteless. (Extractum Cascaræ Sagradæ Examaratæ Fluidum — Tasteless Liquid Extract of Cascara Sagrada, Brit. Form.)

I.

Bitterless cascara sagrada. av.oz. 17½
Alcohol, water, each. sufficient

Use as menstruum a mixture of 3 volumes of alcohol with one of water. The process of extraction may be that of the U. S. P. or N. F., or any other suitable process for fluid extracts. The product should measure 16 fluidounces.

Bitterless cascara sagrada is made by intimately mixing 10 av.ounces of cascara sagrada in fine powder and 1 of calcined magnesia with 20 fluidounces of water, allowing to stand for 12 hours, then drying on a water bath with constant stirring, powdering again, and sifting.—D. Modified.

This is Dieterich's formula for bitterless cascara sagrada bark.

II. Gilpin's formula is as follows:

Cascara sagrada, powder. .av.oz. 10
Licorice root, powder.av.oz. 2¼
Calcined magnesiagr. 90
Clove, powdergr. 45

Mix the powders intimately, moisten with water and knead thoroughly. Transfer the mass to a closed drying chamber and subject to a temperature of 82 deg. C. for 48 hours. Then permit the moisture to escape from the chamber, dry the powder thoroughly, repowder, and sift.

III.

Cascara, No. 40 powder. .av.oz. 20
Calcined magnesia, light. .av.oz. 2
Distilled water, alcohol,
each, to make.fl.oz. 20

Mix the powders, moisten thoroughly with water, macerate for 24 hours, dry thoroughly over a water bath, and reduce the dry mass to powder. Moisten this powder with 20 fluidounces of a mixture of 9 volumes of alcohol and 5 of water, pack lightly in a percolator, and allow percolation to proceed, using the same menstruum, until the drug is exhausted. Reserve the first 17 fluidounces of percolate, distil off the alcohol from the remainder, evaporate the residue to soft extract, dissolve this in the reserved percolate, and add enough of the mixture of 9 volumes of alcohol and 5 of water to make 20 fluidounces of percolate.—Brit. Form.

IV. Edel's process:

Cascara sagrada, coarse
powderav.oz. 16¾
Calcined magnesiaav.oz. 1¼
Alcohol, water, glycerin,
eachsufficient

Mix the drug and magnesia, moisten with water and allow to macerate for several hours. Then pack the mixture in a percolator and allow to macerate for 48 hours; add 12 fluidounces of alcohol, allow to macerate for 12 hours longer, and finally begin, percolation using diluted alcohol as the menstruum. The first 12 fluidounces should be reserved, and percolation continued to ex-

haustion. Recover the alcohol and evaporate the percolate to soft extract, and dissolve it in the reserved portion, adding sufficient glycerin to make 16 fluid-ounces.

The bitterless fluid extracts may be used as they are or be made still more pleasant by the addition of licorice and cinnamon or other aromatics. See Extract, Fluid, of Cascara Sagrada, Aromatic, also Extract, Fluid, of Cascara Sagrada, Water-Miscible.

Extract, Fluid, of Cascara Sagrada, Water-Miscible.

Cascara sagrada, No. 20
powderav.oz. 16¾
Alcoholfl.oz. 4
Distilled watersufficient

Moisten the bark with water, allow to remain a few hours to soften and swell, pack loosely in a percolator, and percolate with more water until exhausted. Evaporate on a water bath to the consistency of a brittle extract, which, when cold, treat with cold water until thoroughly disintegrated. Allow this to stand and settle. Strain through flannel, and evaporate the strained liquor to 12 fluidounces, add the alcohol, when cold, and filter if necessary.

This preparation does not deposit either on keeping or on diluting with water, and, although bitter, is free from nauseous taste and smell.

Extract of Cascarilla.

Cascarilla, coarse powder.av.oz. 16
Water, boilingfl.oz. 123

Macerate the drug with 77 fluidounces of the water for 24 hours at a temperature of 15 to 20 deg. C., express, macerate the residue with the remainder of the boiling water for 24 hours, again express, mix the two liquids, evaporate to a weight of 32 av.ounces, set aside in a cool place for several days, decant the clear liquid, and evaporate to thick extract.—Germ. Pharm.

Extract, Fluid, of Catechu, Comp'd.

The article sold under this name may be made as follows:

Catechu, powderav.oz. 7
Cassia cinnamon, powder...av.oz. 3½
Clean, dry sand, diluted alcohol, eachsufficient

Mix the two drugs and then add about twice the volume of sand; extract this mixture by the usual method for making fluid extracts, using diluted alcohol as a menstruum, the product to measure 16 fluidounces.

This product is 4 times the strength of the official tincture, which latter may be prepared from it by mixing 4 fluid-ounces with 12 fluidounces of diluted alcohol.

Extract, Fluid, of Celery.

From the seed of *Apium graveolens*.

Prepare according to Process A (see Extracts, Fluid), using the drug in No. 60 powder, and a mixture of 2 volumes of alcohol and 1 of water as the menstruum.—N. F.

Extract of Chamomile. (Extract of Anthemis.)

English (Roman) chamomile flowersav.oz. 4
Oil of chamomiledrops 5
Distilled waterfl.oz. 40

Boil the flowers with the water until the volume is reduced one-half, strain off the liquid, express the residue, mix the two liquids, filter, and evaporate the filtrate to soft extract, adding the oil towards the end of the process.—Brit. Pharm.

Extract, Fluid, of (Roman) Chamomile.

Prepare fluid extract by the usual process (see Extracts, Fluid), using a mixture of 3 volumes of alcohol and 2 of water as the menstruum.

Extract, Fluid, of Chestnut. (Fluid Extract of Castanea.)

Castanea, No. 30 powder..av.oz. 16¾
Glycerinfl.dr. 13
Alcohol, water, each.....sufficient

Pour 5 pints of boiling water upon the powder, allow it to macerate for 2 hours, then express the liquid, transfer the residue to a percolator, and pour water upon it until the powder is exhausted. Evaporate the united liquids

on a water bath to 32 fluidounces, allow this to cool and add 9½ fluidounces of alcohol. When the insoluble matter has subsided, separate the clear liquid, filter the remainder, evaporate the united liquids to 11½ fluidounces, allow this to cool, add the glycerin and enough alcohol to make the fluid extract measure 16 fluidounces.—N. F. Appendix and U. S. P. 1890.

It would be better after the expression, to repeat this treatment once or twice with half the quantity of water which will exhaust the drug.

Extract, Fluid, of Chirata.

Prepare according to the general formula (see Extracts, Fluid), but using the drug in No. 30 powder, moistening 16¾ av.ounces of it with 5½ of menstruum, reserving the first 13½ fluidounces of percolate and evaporating the second percolate on a water bath. The menstruum is diluted alcohol.—U. S. P.

Extract of Cinchona.

I. N. F. Appendix and U. S. P.:

Make according to the general process (see Extracts) except that 1 av.pound of the drug (calisaya bark) is to be moistened with 5½ fluidounces of menstruum before packing in the percolator, continuing percolation until 62 fluidounces of percolate are obtained or the drug is exhausted, and evaporating the percolate on a water bath to pilular consistence. The menstruum is a mixture of 46 fluidounces of alcohol and 15½ fluidounces of water for 1 av.pound, the percolation to be continued then with diluted alcohol.

Cinchona used for any U. S. P. preparation should contain not less than 5 per cent. of total alkaloids and not less than 2½ per cent. of quinine.

II. Germ. Pharm. formula for alcoholic extract of cinchona:

Red cinchona, coarse powd.av.oz. 16
Alcohol, water, each. sufficient

Macerate the cinchona with a mixture of 66 fluidounces of alcohol and 22 of

water for 6 days at a temperature of 15 to 20 deg. C., agitate frequently, express, macerate the residue with the same amount of alcohol and water for 3 days, express again, mix the two liquids, let stand for 2 days, filter, and evaporate the filtrate to dry extract.

See also No. III.

III. Germ. Pharm. formula for aqueous extract of cinchona, or the so-called "extractum chinæ frigidum paratum":

Red cinchona, coarse powd.av.oz. 16
Waterpints 19

Mix the drug with one-half the water, set aside for 48 hours at a temperature of 15 to 20 deg. C. and express. Add the remainder of the water, let stand for 48 hours as before, and express. Mix the two liquids, evaporate to a weight of 32 av.ounces, allow to cool, filter, and evaporate the filtrate to a thin extract.

See also No. II.

Extract, Fluid, of Cinchona. (Fluid Extract of Calisaya.)

I.

Prepare according to the general process (see Extracts, Fluid), but moistening 16¾ av.ounces of drug (yellow cinchona) with 5½ fluidounces of menstruum, reserving the first 11¼ fluidounces of percolate, and evaporating the remainder on a water bath. The menstruum for this amount of drug is a mixture of 13 fluidrams each of glycerin and water and 12¾ fluidounces of alcohol, to be followed by a mixture of 4 volumes of alcohol and 1 of water. The product is to be assayed and is to be made to contain 4 grams of anhydrous ether-soluble alkaloids in 100 cc.; if it contains more, add enough of the mixture of 4 volumes of alcohol and 1 of water to reduce it to this standard.—U. S. P.

II. Brit. Pharm. formula for liquid extract of cinchona:

Red cinchona, No. 60 powd.av.oz. 12½
Hydrochloric acidfl.oz. 3
Glycerinfl.oz. 1½
Alcohol, distilled water...sufficient

Mix the drug with 60 fluidounces of distilled water to which the acid and glycerin have previously been added, set aside in a covered vessel for 48 hours, stirring frequently, and transfer to a percolator. When the liquid ceases to pass and the contents of the percolator have been properly packed, continue the percolation with distilled water until 180 fluidounces of percolate have been obtained or until it no longer gives a precipitate when mixed with an excess of solution of potassium hydrate. This percolate is then to be evaporated, in a porcelain or enameled-iron vessel at a temperature not exceeding 82 deg. C., until reduced to 12 fluidounces.

The liquid is now to be assayed for total alkaloids, and every volume that contains 5 grams of total alkaloids is to be brought to a volume of 85 cc., either by evaporation or by addition of distilled water; to this is to be added 12½ cc. of alcohol and enough distilled water to make 100 cc.

The product contains 5 grams of total alkaloids in 100 cc. (5 grains in 110 minims).

The bark (red only being recognized) is also to be standardized to contain between 5 and 6 per cent. of total alkaloids, of which not less than half should consist of quinine and cinchonidine.

Extract, Fluid, of Cinchona, Comp.

The article sold commercially under this title may be prepared as follows:

Red cinchona, powder.....av.oz. 7
Bitter orange peel, powder..av.oz. 5½
Serpentaria, powderav.oz. 1½
Glycerin, water, alcohol,
eachsufficient

As a menstruum, use a mixture of the three liquids in the proportion of 1¼ fluidounces each of the glycerin and water with 14 of alcohol. Exhaust the mixed drugs by any suitable process so as to obtain 16 fluidounces of product.

This product is 4 times the strength of the compound tincture. To make the tincture, mix 4 fluidounces of this fluid extract, 1 of water, and 11 of alcohol.

Extract, Fluid, of Coca.

Prepare according to the general process (see Extracts, Fluid), moistening 16¾ av.ounces of the drug with 7½ fluidounces of the menstruum (diluted alcohol), reserving the first 11¼ fluidounces of percolate and evaporating the remainder at not above 50 deg. C. The product is to be assayed and is to be made to contain ½ gram of ether-soluble alkaloids in 100 cc.; if it contains more than this amount, diluted alcohol is to be added to it to reduce it to this standard.—U. S. P.

The liquid extract of coca of the Brit. Pharm. is prepared with a mixture of 2 volumes of alcohol and 1 of water; the weak percolate is evaporated at a temperature not exceeding 80 deg. C.

Extract of Cod-Liver Oil.

Cod-liver oil, brown.....av.oz. 15
Sodium carbonate, pure,
monohydratedgr. 290
Distilled waterfl.oz. 8
Alcoholfl.oz. 27

Dissolve the sodium salt in the water, add to the oil, agitate repeatedly and thoroughly during 24 hours, then allow to remain quiet for 12 hours, and decant the oily layer. Mix the latter with 18 fluidounces of alcohol, agitate vigorously for half an hour, set aside for a short time, decant the alcoholic layer, mix the oily portion with the remainder of the alcohol, agitate thoroughly, allow to stand, and again decant the alcoholic layer. Mix the two alcoholic liquids and distil off the alcohol. The residue is a so-called "extract of cod-liver oil."

The product should be kept in a well-closed bottle protected from light.—H. modified.

Light-colored oil is also used for making this "extract," but the yield is smaller. The light oil requires no preliminary washing with alkali and water which are used to remove acids from the dark oil.

Extract, Fluid, of (Green) Coffee.

From the commercial, unroasted seeds of *Coffea arabica*.

Prepare according to Process B (see Extracts, Fluid), using the drug in No. 20 powder, the first menstruum being a mixture of 1 fluidounce of glycerin, 4 of alcohol and 11 of water (for 16¾ av.ounces of drug), the second a mixture of 1 volume of alcohol and 3 of water.—N. F.

It is recommended that the best quality of either of the commercial varieties known as "Java," or "Mocha," coffee be employed for this preparation.

Extract, Fluid, of (Roasted) Coffee.

Prepare exactly like Extract, Fluid, of (Green) Coffee, which see, using roasted coffee (same varieties preferred) instead of green coffee.—N. F.

Extract of Colchicum Corm. (Extract of Colchicum Root.)

Prepare according to the general process (see Extracts), but moistening 1 av.pound of drug with 8 fluidounces of menstruum, percolating the drug till exhausted, and evaporating the percolate on a water bath at a temperature not exceeding 80 deg. C. The menstruum for 1 av.pound of drug is a mixture of 5½ fluidounces of acetic acid and 23 fluidounces of water, the percolation to be continued with water.

The product is assayed and is to contain 1.4 per cent. of colchicine. If found to contain more than this percentage, enough powdered sugar of milk should be added to reduce it to this standard.—U. S. P.

Extract, Fluid, of Colchicum Root.

Prepare according to the general process (see Extracts, Fluid). The menstruum is a mixture of 2 parts of alcohol and 1 of water.—N. F. Appendix and U. S. P. 1890.

Extract, Fluid, of Colchicum Seed.

Prepare according to the general process (see Extracts, Fluid), extracting 16¾ av.ounces of the drug in No. 50 powder with a mixture of 2 volumes of alcohol and 1 of water, first moistening with 5 fluidounces of menstruum. Reserve the first 12 fluidounces of percolate and evaporate the remainder to soft extract. The product is to be assayed

and made to contain ½ gram of colchicine in 100 cc.; if it contains more than this amount.—U. S. P.

Extract of Colocynth.

I.

Colocynth, dried, and freed
from seedsav.oz. 8
Diluted alcoholsufficient

Reduce the drug to coarse powder by grinding or bruising, macerate in 27 fluidounces of diluted alcohol for 4 days, stirring occasionally, express strongly, and strain through flannel. Pack the residue, previously broken up with the hands, firmly in a cylindrical percolator, cover it with the strainer, and gradually pour diluted alcohol upon it until the percolate and the expressed liquid, mixed together, measure 38½ fluidounces. Distil off the alcohol from the mixture on a water bath, evaporate the residue to dryness, and reduce the dry mass to powder.—U. S. P.

The product should be kept in well-stoppered bottles.

II.

Colocynth, coarsely cut, with
the seedsav.oz. 16
Alcohol, water, each.....sufficient

Macerate the drug with a mixture of 18 pints of alcohol and 6 pints of water for 6 days, at a temperature of 15 to 20 deg. C., agitating occasionally, express, macerate the residue for 3 days with a mixture of 138 fluidounces of alcohol and 115 of water, agitating occasionally, express again, mix the two liquids, and evaporate to dryness.—Germ. Pharm.

Extract of Colocynth, Compound.

Aloes, purifiedav.oz. 2
Extract of colocynth.....gr. 280
Resin of scammony, fine
powdergr. 245
Castile soap, dried, coarse
powdergr. 245
Cardamom, No. 60 powder..gr. 105
Alcoholfl.dr. 3

Heat the aloes, contained in a suitable vessel, on a water bath, until it is completely melted, then add the alcohol, soap, extract of colocynth and resin of scammony, and heat the mixture at a

temperature not exceeding 120 deg. C. until it is perfectly homogeneous and a thread taken from the mass becomes brittle when cool. Then withdraw the heat, thoroughly incorporate the cardamom with the mixture, and cover the vessel until the contents are cold. Then reduce to fine powder.—U. S. P.

Keep in well-stoppered bottles.

This is a preparation that every pharmacist should make for himself, owing to the notoriously variable and inferior character of the commercial product.

The preparation of the Brit. Pharm. is practically the same, although extract of barbadose aloes is used instead of purified aloes, curd soap instead of castile soap, and the pulp of colocynth is directed to be extracted instead of using the extract itself.

Extract of Columbo

Columbo, coarse powder,

Water, alcohol, each.....sufficient

Take any suitable quantity of drug, moisten with a mixture of 4 parts of alcohol and 5 of water, then pack in a percolator, macerate and percolate in the usual manner with the same menstruum until the drug is exhausted, then evaporate to soft extract or dryness on a water bath.—D. modified.

The yield is 9 to 11 per cent.

Extract, Fluid, of Columbo. (Fluid Extract of Calumba.)

Prepare according to the general process (see Extracts, Fluid), but using the drug in No. 20 powder, moistening 16¾ av.ounces of it with 5 fluidounces of menstruum, collecting the first 11¼ fluidounces of percolate as the residue, and evaporating the remainder of the percolate on a water bath. The menstruum is a mixture of 7 volumes of alcohol and 3 of water.—U. S. P.

Extract, Fluid, of Condurango.

(Liquid Extract of Condurango.)

I. Exhaust the drug by any suitable process for fluid extracts (see Extracts, Fluid), moistening 16¾ av.ounces of

drug with a mixture of 22 fluidrams of alcohol, 4 fluidounces of water and 10 fluidrams of glycerin, then percolating with a mixture of 2 volumes of alcohol and 5 of water.—Germ. Pharm. modified.

II.

Exhaust the drug in No. 60 with 60 per cent. (by volume) alcohol, using 16¾ av.ounces of drug to make 16 fluidounces of product.—Brit. Form.

Extract of Conium. (Extract of Hemlock.)

Make according to the general process (see Extracts), but using the drug (which is the fruit, or so-called "seed") in No. 40 powder and moistening 1 av.pound of drug with 4½ fluidounces of menstruum. The latter, for 1 av. pound of drug, is a mixture of 2½ fluidrams of acetic acid and 15 fluidounces of diluted alcohol, to be followed by diluted alcohol.—N. F. Appendix and U. S. P. modified.

Extract, Fluid, of Conium. (Fluid Extract, of Hemlock.)

I.

Prepare according to the general process (see Extracts, Fluid), but using the drug (which is the fruit or so-called "seed") in No. 40 powder, moistening 16¾ av.ounces of it with 5 fluidounces of menstruum, reserving the first 13 fluidounces of percolate, and evaporating the remainder at not above 50 deg. C. The menstruum is a mixture 2½ fluidrams of 36 per cent. acetic acid with 15½ fluidounces of diluted alcohol, to be followed by diluted alcohol. The product is to be assayed and made to contain 0.45 gram of coniine in 100 cc.; if it contains more, enough diluted alcohol is to be added to reduce it to this standard.—U. S. P.

II.

Conium fruit, No. 40 powder	av.oz. 16¾
Acetic acid	m. 100
Alcohol, 60 per cent. by volume, to make.....	fl.oz. 16

Mix the acid with 16 fluidounces of

the alcohol, and exhaust the drug by percolation, using alcohol without acid when the acid menstruum is all consumed; reserve the first 13½ fluid-ounces of percolate.—Brit. Form.

Extract, Fluid, of Corn Silk. (Fluid Extract of Zea—Extractum Stigmatum Maydis Fluidum.)

From the stigmata of Zea Mays (Indian Corn).

Prepare according to Process A (see Extracts, Fluid), using the drug in No. 40 powder, and diluted alcohol as the menstruum.—N. F.

Such a preparation is, however, inferior to one made from the fresh drug as follows:

Corn silk, fresh.....av.oz. 16
Alcoholfl.oz. 16

Mix in a well-closed vessel, macerate for 7 days, then express, and filter, if necessary.

Extract, Fluid, of Coto.

Prepare according to Process A (see Extracts, Fluid), using the drug in No. 60 powder, and a mixture of 9 volumes of alcohol and 1 of water as the menstruum.—N. F.

Extract of Coto, Saccharated.

Exhaust 1 av.pound of finely powdered coto bark with alcohol, making a fluid extract in the usual manner, then evaporate this on a water bath to soft extract, add 4 av.ounces of powdered milk sugar, evaporate the mixture at a low temperature to dryness, powder, then add enough sugar of milk to make 1 av.pound, triturate the whole until well mixed and reduced to fine powder.

Extract, Fluid, of Cotton Root Bark.

Prepare according to the general process (see Extracts, Fluid), but using the drug in No. 30 powder, moistening 16¾ av.ounces of drug with 8 fluidounces of menstruum. The menstruum for 16¾ av.ounces of drug is a mixture of 4 fluidounces of glycerin and 12 of alcohol, to be followed by alcohol.—U. S. P. 1890.

Extract of Couch-Grass. (Extract of Triticum.)

Couch-grass, cut.....av.oz. 8
Water, boilingfl.oz. 38

Digest for 6 hours, strain, boil the liquid down to about 3 fluid or av. ounces, filter, and evaporate to a thick extract.—Germ. Pharm. (2nd).

Extract, Fluid, of Couch-Grass. (Fluid Extract of Dog-Grass or Triticum—Extractum Fluidum Graminis.)

I.

Couch-grass, finely cut.....av.oz. 16¾
Alcohol, water, each.....sufficient

Pack the drug in a cylindrical percolator, pour boiling water upon it, and allow percolation to proceed, supplying hot water as required until the drug is exhausted. Evaporate the percolate to 12 fluidounces, add, when cool, 4 fluid-ounces of alcohol, mix well, and set aside for 48 hours. Then filter the liquid, and add to the filtrate enough of a mixture of 3 volumes of water with 1 of alcohol to make 16 fluidounces of mixture.—U. S. P.

II. The following is a quicker process than that of the U. S. P., and yields a product equally good:

Couch-grass, cutav.oz. 16¾
Alcoholfl.oz. 4
Watersufficient

Boil the drug for one-half hour with 5 pints of water, strain and express; boil the residue again in the same way with the same amount of water, strain again and express. Mix the two decoctions, evaporate them to 12 fluidounces, add 4 fluidounces of alcohol, filter, and add enough water through the filter, if necessary, to make 16 fluidounces.

III. The commercial fluid extract is usually made by reducing the drug to powder and extracting by the usual process of percolation for fluid extracts, using a mixture of 1 volume of alcohol and 3 volumes of water as the menstruum.

IV. Brit. Form. formula for liquid extract of couch-grass:

Couch-grass, No. 20 powder. av. oz. $8\frac{3}{4}$
 Alcohol, distilled water,
 each sufficient

Moisten the drug with 3 fluidounces of water, pack in a percolator, and pour on boiling distilled water until the drug is exhausted. Evaporate the percolate to 12 fluidounces, add to it 4 fluidounces of alcohol, set aside 48 hours, filter, and through the filter add enough of a mixture of 1 volume of alcohol and 3 of water to make the filtrate measure 16 fluidounces.

This makes a preparation which is only one-half the strength of a fluid extract.

Extract Liquid of Couch-Grass.
(Mellago Graminis.)

Extract of couch-grass. av. oz. 7
 Water fl. oz. 3
 Dissolve the extract in the water.

This preparation decomposes very readily and must be made only as required—H.

This preparation need not be made from the extract; it may be directly from the drug, then evaporating the infusion to the consistence of honey.

Extract, Fluid, of Cramp Bark.
(Fluid Extract of Viburnum Opulus.)

Prepare according to the general process (see Extracts, Fluid), but moistening $16\frac{3}{4}$ av. ounces of drug with 5 fluidounces of menstruum, reserving the first $13\frac{1}{2}$ fluidounces of percolate, and evaporating the remainder on a water bath. The menstruum is a mixture of 2 volumes of alcohol and 1 of water.—U. S. P.

Extract, Fluid, of Cubeb.

Prepare according to the general process (see Extracts, Fluid), but moistening $16\frac{3}{4}$ av. ounces of drug with $3\frac{1}{2}$ fluidounces of menstruum, reserving the first $14\frac{1}{2}$ fluidounces of percolate, and evaporating the remainder on a water bath. The menstruum is alcohol.—U. S. P.

Extract of Culver's Root. (Extract of Leptandra.)

Evaporate 4 fluidounces of fluid extract in a porcelain dish by means of a water bath at a temperature not exceeding 70 deg. C. with constant stirring to complete dryness. Reduce the product to fine powder and add enough peeled Russian licorice root in No. 80 powder to make the product weigh 1 av. ounce.—U. S. P.

Extract, Fluid, of Culver's Root.
(Fluid Extract of Leptandra.)

Prepare according to the general process (see Extracts, Fluid), reserving the first $13\frac{1}{2}$ fluidounces of percolate from $16\frac{3}{4}$ av. ounces of drug and evaporating the remainder on a water bath. The menstruum is a mixture of 3 volumes of alcohol and 1 of water.—U. S. P.

Extract, Fluid, of Damiana. (Fluid Extract of Turnera—Liquid Extract of Damiana.)

I.

Prepare according to Process A (see Extracts, Fluid), using the drug in No. 20 powder, and a mixture of 2 volumes of alcohol and 1 of water as the menstruum.—N. F.

II.

Extract the drug in No. 60 powder with 60 per cent. (by volume) alcohol, using $16\frac{3}{4}$ av. ounces of drug to make 16 fluidounces of product.—Brit. Form.

Extract of Dandelion. (Extract of Taraxacum.)

I.

Exhaust the dried drug in the usual manner (see under Extracts), using the drug in No. 30 powder and a menstruum composed of 1 part of alcohol and 7 of water. Exhaust the drug and evaporate the whole of the liquid on a water bath to pilular consistence.—U. S. P.

In the U. S. P. 1890, the fresh drug was contused and expressed and the product evaporated to pilular consistence.

II. The Brit. Pharm. directs the fresh root to be contused, express the juice, allow the feculence to subside,

heat the liquid to 100 deg. C., maintain the temperature for 10 minutes, strain, and evaporate the liquid to soft extract.

III.

Dandelion, cut moderately fineav.oz. 16
Alcoholfl.oz. 18½
Watersufficient

Macerate the drug with 77 fluidounces of water for 48 hours at a temperature of 15 to 20 deg. C., agitating occasionally, express, macerate the residue in the same manner with 46 fluidounces of water for 12 hours, again express, mix the two liquids, evaporate to a weight of 32 av.ounces, when cold add the alcohol, set aside in a cool place for 2 days, filter, and evaporate the filtrate to thick extract.—Germ. Pharm.

The root should be collected before flowering time.

Extract, Fluid, of Dandelion.

I.

Prepare according to the general formula (see Extracts, Fluid), but using the drug in No. 30 powder, moistening 16¾ av.ounces of it with 5 fluidounces of menstruum (diluted alcohol), reserving the first 13 fluidounces of percolate and evaporating the remainder on a water bath to soft extract. Dissolve this in the reserved percolate, add 6 fluidrams of solution of sodium hydrate, and enough diluted alcohol to make 16 fluidounces. The alkali neutralizes the taraxacic acid and retains the taraxacin and taraxacerin in solution.—U. S. P.

II. Brit. Pharm. formula for liquid extract of dandelion:

Dandelion root, dried, No. 20 powderav.oz. 16¾
Alcoholfl.oz. 20
Distilled watersufficient

Macerate the drug with the alcohol mixed with 12 fluidounces of water, in a closed vessel, for 48 hours, express 8 fluidounces of liquid, mix the residue with 32 fluidounces of distilled water, set aside for 48 hours, express again, evaporate this liquid to 8 fluidounces, mix this residue with the previous liquid,

add enough water, if necessary, to make 16 fluidounces, and filter.

Extract of Digitalis.

Evaporate the fluid extract in a porcelain dish on a water bath at a temperature not exceeding 50 deg. C., stirring constantly, until reduced to pilular consistence.—U. S. P.

Extract, Fluid, of Digitalis.

Prepare according to the general process (see Extracts, Fluid), reserving the first 13½ fluidounces of percolate received from 16¾ av.ounces of drug. The menstruum is diluted alcohol. The weak percolate is to be evaporated at not above 50 deg. C.—U. S. P.

Extract, Fluid, of Dita. (Fluid Extract of Alstonia Scholaris.)

Extract the bark in moderately fine powder by any suitable process for making fluid extracts, using a mixture of 3 volumes of alcohol and 2 of water as the menstruum.

Extract, Fluid, of Dogwood. (Fluid Extract of Cornus.)

Prepare according to Process B (see Extracts, Fluid), using the drug in No. 60 powder, a mixture of 2½ fluidounces of glycerin with 14 fluidounces of diluted alcohol being the first menstruum (for 16¾ av.ounces of drug), and diluted alcohol the second menstruum.—N. F. and U. S. P. 1880.

Extract of Elecampane. (Extract of Inula—Extractum Helenii.)

Make according to the general process (see Extracts), using a mixture of 4 volumes of alcohol and 5 of water as the menstruum.—Germ. Pharm. (1st) modified.

The yield is about 30 per cent.

Extract of Ergot. (Ergotin.)

I. The excellent process of the new U. S. P. is as follows:

Ergot, No. 40 powder....av.oz. 8
Hydrochloric acid, diluted..fl.dr. 3
Sodium carbonate, pure,
monohydratedgr. 30
Glycerinm. 50
Alcohol, distilled water,
eachsufficient

Mix 8 fluidounces of alcohol with 32 fluidounces of distilled water and, having moistened the powder with 4 fluidounces of this mixture, pack it firmly in a cylindrical percolator; then add enough menstruum to saturate the liquid and leave a stratum above it. When the liquid begins to drop from the percolator, close the lower orifice, and having closely covered the percolator, macerate for 48 hours. Then allow percolation to proceed, gradually adding menstruum, using the same proportions of alcohol and water as before, until the drug is exhausted. Evaporate the percolate in a porcelain dish by means of a water bath, at a temperature not exceeding 50 deg. C. to 2 av.ounces, add 2 fluidounces of distilled water, and stir; filter when cold, rinse the dish with a little water, and add this to the filter. Add the diluted hydrochloric acid to the filtrate, set it aside for 24 hours, filter, wash the contents of the filter with distilled water until the washings no longer have an acid reaction, and add the washings to the filtrate. To this add gradually the sodium carbonate and, when the evolution of gas has ceased, evaporate the liquid in a tared dish until it weighs $1\frac{1}{4}$ av.ounces, add the glycerin, and continue the evaporation until the extract weighs 1 av.ounce.

All the alkaloid (cornutine) is retained in solution, while much useless matter such as fixed oil, resin, coloring matter, etc., is removed; a small amount of sodium chlorid remains in solution, but this does no harm. The extract is of the consistency of thick honey, represents 8 times its weight of drug, makes a perfectly clear solution with water, and is well adapted for hypodermic use.

It is almost needless to say that the ergotin or extract of ergot of commerce is not made by any such careful method. Usually the drug is extracted with a more or less aqueous menstruum, and the liquid is evaporated to extract consistency. Bonjean's ergotin was origi-

nally made by exhausting powdered ergot with cold water by percolation, heating the percolate to 90 deg. C., filtering, evaporating the filtrate to a syrupy consistence, allowing to cool, adding alcohol in considerable excess to precipitate gummy and albuminous matter, allowing to stand, decanting the clear liquid, or else filtering, and evaporating the decantate or filtrate on a water bath to soft extract.

The ergotin of Wiggers, which is probably no longer in use, was simply a dried alcoholic extract of ergot.

II.

Ergot, No. 40 powder.....av.oz. 8
Diluted hydrochloric acid...fl.dr. 3
Sodium carbonate, crystal,
puregr. 70
Alcohol, distilled water,
eachsufficient

Moisten the drug with 8 fluidounces of a mixture of 2 volumes of alcohol and 1 of water, pack into a percolator, and percolate with the same menstruum until exhausted. Evaporate the percolate to 2 fluidounces, add 2 fluidounces of distilled water, and filter when cold, washing the residue on the filter with a small quantity of distilled water. Add the acid to the filtrate, set aside for 24 hours, filter, wash the residue on the filter with distilled water until the washings are no longer acid, adding the washings to the filtrate. Add the sodium carbonate to the liquid, and evaporate to soft extract.—Brit. Pharm.

III.

Ergot, coarse powder.....av.oz. 8
Distilled waterfl.oz. 31
Alcoholfl.oz. $4\frac{3}{4}$

Mix the drug with one-half of the water, set aside for 6 hours where it will be at a temperature of 15 to 20 deg. C., agitating occasionally, and express. Macerate the residue in the same manner with the same amount of water, and again express. Mix the two liquids, evaporate them to a weight of 4 av.ounces, and add the alcohol. Set aside for 3 days, agitating occasionally, filter,

and evaporate the filtrate to thick extract.—Germ. Pharm.

The yield is about 15 per cent.

IV.

Ergot, coarse powder.....av.oz. 8
Distilled waterfl.oz. 38½
Alcoholsufficient

Mix the drug with 15½ fluidounces of distilled water, pack in a percolator, macerate for 12 hours, then allow the liquid to drain off, heat the percolate on a water bath until flocculent matter separates, and filter. Through the drug slowly, pass the remainder of the water, evaporate this percolate to syrupy consistence, mix with the preceding evaporated liquid, and to this mixture add 3 times its volume of alcohol, set aside for 24 hours, agitating frequently, filter, and evaporate on a water bath to thick extract.—Austr. Pharm.

Extract, Fluid, of Ergot.

I.

Prepare according to the general process (see Extracts, Fluid), but moistening 16¾ av.ounces of drug with 5 fluidounces of menstruum, and collecting the first 13½ fluidounces that passes the percolator as the reserve percolate. The drug should be freshly ground. The menstruum for 16¾ av.ounces of drug is 2½ fluidrams of acetic acid (36 per cent.) mixed with 13½ fluidounces of diluted alcohol, to be followed by diluted alcohol. The weak percolate is to be evaporated at a temperature not above 50 deg. C.—U. S. P.

II. Brit. Pharm. formula for liquid extract of ergot:

Ergot, crushedav.oz. 16¾
Distilled waterfl.oz. 120
Alcoholfl.oz. 6

Digest the ergot with 80 fluidounces of the water for 12 hours, decant the liquid, repeat the digestion with the remainder of the water, express the liquid, mix the two liquids, evaporate them to 11¼ fluidounces, add the alcohol, set aside for an hour, and filter.

III.

Ergot, coarse powder.....av.oz. 16
Hydrochloric acidfl.dr. 3
Alcohol, distilled water,
eachsufficient

Moisten the drug with a mixture of 3 fluidrams of alcohol and 10 fluidrams of water, pack in a percolator, and percolate with a mixture of 3 volumes of alcohol and 10 of water, to exhaustion. Reserve the first 13½ av.ounces of percolate, mix the weak percolate with the acid, evaporate it to a soft extract. Mix the reserve with the soft extract and add enough menstruum to make the product weigh 16 av.ounces.—Germ. Pharm.

IV. Another preparation highly desirable for hypodermic use is the following (Hallberg's formula):

"Purified ergot" is digested with twice its weight of water at 65 deg. C., for 24 hours and expressed; the residue is again macerated in warm water for 12 hours. After settling, the expressed liquids are strained and evaporated separately; when both together weigh one-half as much as the ergot employed, they are mixed and sufficient alcohol added to make the liquid of 25 per cent. alcoholic strength, or one-third as much as the aqueous solution. After standing for several hours, the liquid is filtered and the gummy residue washed with so much 25 per cent. alcohol (4 volumes of alcohol and 11 of distilled water) as to make the filtered liquid measure three-fourths or 75 per cent. of the amount of crude drug employed (volume for weight). To this glycerin is added to make the finished preparation represent the amount of crude drug ergot originally used, pint for pound.

This preparation should be kept in small well-filled bottles in a cool, dark place.

Purified ergot used for this preparation may be made by percolating coarsely powdered ergot with deodorized benzine, until no more fatty matter is extracted, then passing alcohol through the

drug until all the benzine is displaced, and then spreading the extracted drug out in thin layers and allowing it to remain exposed until perfectly dry and free from the odor of alcohol and benzine.

Such a prepared ergot will keep indefinitely.

Extract, Fluid, of Eucalyptus.

Prepare according to the general process (see Extracts, Fluid), but using the drug in No. 40 powder, reserving the first $14\frac{1}{2}$ fluidounces of percolate obtained from $16\frac{3}{4}$ av.ounces of drug, and evaporating the remainder on a water bath at not above 50 deg. C. The menstruum is a mixture of 3 volumes of alcohol and 1 of water.—U. S. P.

Extract, Fluid, of False Bittersweet. (Fluid Extract of Celastrus.)

Extract the drug, in fine powder, by any suitable process for fluid extracts, using diluted alcohol as the menstruum.

Extract, Fluid, of False Damiana. (Fluid Extract of Aplopappus.)

Extract the leaves in very fine powder by any suitable process for fluid extracts, using alcohol as the menstruum.

Extract, Fluid, of Froswort. (Fluid Extract of Helianthemum.)

From the herb of Helianthemum canadense.

Prepare according to Process A (see Extracts, Fluid), using the drug in No. 40 powder and diluted alcohol as the menstruum.—N. F.

Extract, Fluid, of Galangal.

Extract the powdered drug by any suitable process for fluid extracts, using alcohol as a menstruum.

Extract, Fluid, of Gelsemium.

Prepare according to the general process (see Extracts, Fluid), but moistening $16\frac{3}{4}$ av.ounces of drug with 5 fluidounces of menstruum, reserving the first $14\frac{1}{2}$ fluidounces of percolate, and evaporating the remainder on a water bath. The menstruum is alcohol.—U. S. P.

Extract of Gentian.

I.

Gentian, No. 20 powder...av.oz. 16
Watersufficient

Moisten the powder with $6\frac{1}{2}$ fluidounces of water, macerate for 24 hours, pack in a conical percolator, and gradually pour water upon it until the percolate has but a slight bitter taste. Then reduce the liquid to three-fourths of its bulk by boiling, strain, and evaporate on a water bath to pilular consistence.—U. S. P.

Commercial extract of gentian is made by boiling with water; the yield being greater, but a cold-prepared extract is superior.

The extract of the Brit. Pharm. is made by infusing the drug with 10 times its weight of distilled water for 2 hours, boiling 15 minutes, straining, expressing, and evaporating the liquid to soft extract.

II.

Gentian, cut into thin shavingsav.oz. 16
Waterfl.oz. 123
Alcoholfl.oz. 18 $\frac{1}{2}$

Macerate the drug with 77 fluidounces of water for 48 hours at a temperature of 15 to 20 deg. C., agitating occasionally, and express. Concentrate the liquid by evaporation; also macerate the residue in the same manner for 12 hours with 46 fluidounces of water, express, mix the two liquids, evaporate them to a weight of 48 av.ounces, when cold add the alcohol, set aside for 2 days in a cool place, filter, and evaporate the filtrate to thick extract.—Germ. Pharm.

Extract, Fluid, of Gentian.

Prepare according to the general process (see Extracts, Fluid), but using the drug in No. 30 powder, moistening $16\frac{3}{4}$ av.ounces of it with $5\frac{1}{2}$ fluidounces of menstruum, reserving the first 13 fluidounces of percolate, and evaporating the remainder on a water bath. The menstruum is diluted alcohol.—U. S. P.

Extract, Fluid, of Gentian, Compound.

The article sold commercially under this title may be prepared as follows:

Gentian	av.oz. 10
Bitter orange peel.....	av.oz. 4
Cardamom	av.oz. 1
Alcohol, water, each, to make	fl.oz. 16

Reduce the drugs together to moderately coarse powder, and extract by the usual process for making fluid extracts, so as to obtain 16 fluidounces of product, using as a menstruum a mixture of 3 volumes of alcohol and 2 of water.

The product is six times the strength of the official compound tincture, which latter may be prepared from it by mixing 1 fluidounce of it with 3 of alcohol and 2 of water.

Extract, Fluid, of Gentiana Quinquifolia.

Extract the root in moderately fine powder, by any suitable process for fluid extracts, using as a menstruum a mixture of 3 volumes of alcohol and 2 of water.

Extract, Fluid, of Geranium. (Fluid Extract of Cranesbill.)

Prepare according to the general process (see Extracts, Fluid), but using the drug in No. 30 powder, moistening $16\frac{3}{4}$ av.ounces of it with $5\frac{1}{2}$ fluidounces of menstruum, reserving the first $11\frac{1}{2}$ fluidounces of percolate, and evaporating the remainder on a water bath. The menstruum for $16\frac{3}{4}$ av.ounces of drug is a mixture of 13 fluidrams of glycerin, $9\frac{1}{2}$ fluidounces of alcohol and $4\frac{3}{4}$ fluidounces of water, to be followed by a mixture of 3 volumes of alcohol and 2 of water.—U. S. P.

Extract, Fluid, of Ginger.

Prepare according to the general process (see Extracts, Fluid), but using the drug in No. 40 powder, moistening $16\frac{3}{4}$ av.ounces of it with 4 fluidounces of menstruum (alcohol), reserving the first $14\frac{1}{2}$ fluidounces of percolate, and evaporating the remainder at not above 50 deg. C.—U. S. P.

Extract of Golden Seal. (Extract of Hydrastis.)

Exhaust golden seal in fine powder by any suitable process for extracts (see Extracts), using as a menstruum a mixture of alcohol and water in the proportion of 2 of the former to 1 of the latter by volume; then evaporate the tincture on a water bath to soft extract consistency. The alcohol may be recovered from the percolate by distillation.

Extract, Fluid, of Golden Seal. (Fluid Extract of Hydrastis.)

Prepare according to the general formula (see Extracts, Fluid), but moistening $16\frac{3}{4}$ av.ounces of drug with 5 fluidounces of menstruum, reserving the first 12 fluidounces of percolate, and evaporating the remainder on a water bath. The menstruum is a mixture of 13 fluidrams of glycerin with $9\frac{1}{2}$ fluidounces of alcohol and $4\frac{3}{4}$ of water, to be followed by a mixture of 2 volumes of alcohol and 1 of water. The product is to be assayed and made to contain 2 grams of hydrastine in 100 cc.; if it contains more than this proportion, a mixture of 2 volumes of alcohol and 1 of water should be added to reduce it to this standard.—U. S. P.

The Germ. Pharm. directs a menstruum composed of 3 volumes of alcohol and 1 of water, making 100 parts by weight of fluid extract from 100 parts of drug.

The preparation of the Brit. Pharm. is made with diluted alcohol as the menstruum.

Extract, Fluid, of Golden Seal, Aqueous or Non-Alcoholic.

The preparation which is sold under this name is generally prepared like the "glycerite of hydrastis" of the U. S. P. This is prepared according to the following formulas:

I. U. S. P.:

Golden seal, fine powder...	av.oz. $16\frac{3}{4}$
Glycerin	fl.oz. 8
Alcohol, water, each.....	sufficient

Moisten the drug with $5\frac{1}{2}$ fluidounces of alcohol, pack it firmly in a percolator,

and percolate with alcohol until the hydrastis is practically exhausted. To the percolate add 4 fluidounces of water, and then remove the alcohol by evaporation or distillation. After the alcohol is driven off, add enough water to the residue to make it measure 8 fluidounces, set it aside for 24 hours, then filter, pass enough water through the filter to make the filtrate measure 8 fluidounces, and, lastly, add the glycerin.

II. Clark's process:

Golden seal, fine powder...av.oz. 16¾
Glycerinf.oz. 8
Alcohol, water, each.....sufficient

Exhaust the drug by percolation with a mixture of 9 volumes of alcohol and 1 of water. To the percolate add the glycerin and 4 fluidounces of water, and recover the alcohol by distillation. Let the residue stand for 2 days to separate resinous matter which deposits, decant the clear liquid, filter it, and add sufficient water to make the preparation measure 16 fluidounces.

III. Lippincott's process:

Golden seal, No. 40 powder.av.oz. 12
Distilled waterf.oz. 12
Glycerinf.oz. 12
Alcoholf.oz. 2

Mix the liquids, moisten the drug with 12 fluidounces, pack into a water-bath percolator, and the remaining liquid, heat the water bath and percolate to 88 deg. C. Reserve all the percolate, add to the drug twice successively 16 fluidounces of hot distilled water. Evaporate all of the latter percolate to a bulk that when mixed with the reserved liquid will make 16 fluidounces; mix and filter.

Extract, Fluid, of Golden Seal, Colorless.

The preparation which is sold under this title is the same as the "colorless solution of hydrastis." See Solution of Hydrastis, Colorless.

Extract, Fluid, of Goldthread. (Fluid Extract of Coptis.)

Prepare according to Process A (see Extracts, Fluid), using the drug in

No. 40 powder, and diluted alcohol as the menstruum.—N. F.

Extract, Fluid, of Green Osier.

From the bark of *Cornus circinata*.

Prepare according to Process A (see Extracts, Fluid), using the drug in No. 40 powder, and diluted alcohol as the menstruum.—N. F.

Extract, Fluid, of Grindelia.

Prepare according to the general process (see Extracts, Fluid), but using the drug in No. 30 powder, moistening 16¾ av.ounces of it with 5 fluidounces of menstruum, reserving the first 13½ fluidounces of percolate, and evaporating the remainder on a water bath. The menstruum is a mixture of 3 volumes of alcohol and 1 of water.—U. S. P.

The liquid extract of grindelia of the Brit. Form. is made in the same manner, but using alcohol as the menstruum. This was also the menstruum of the U. S. P. 1890.

Extract, Fluid, of Grindelia, Alkaline.

Rother's formula:

Grindelia, groundav.oz. 16¾
Sodium bicarbonategr. 240
Alcohol, water, each.....sufficient

Moisten the drug with a mixture of 2 fluidounces of a mixture of 7 volumes of alcohol and 1 of water, pack in a percolator, and extract with the same menstruum to exhaustion. Distil the percolate to recover the alcohol, mix the dark-green residue with 8 fluidounces of water, and add the sodium bicarbonate gradually, stirring constantly. When the effervescence has nearly all subsided, warm the mixture gently, allow to cool, add water to make 12 fluidounces, filter, adding through the filter, if necessary, enough water to make 12 fluidounces of filtrate, and to the latter add 4 fluidounces of alcohol.

Extract, Fluid, of Guaiac.

The so-called fluid extract of guaiac listed by manufacturers may be prepared as follows:

Guaiac resin, coarse powd..av.oz. $8\frac{1}{4}$
 Alcohol, to make.....fl.oz. 16

Mix the resin with the alcohol in a wide-mouthed bottle, cork well, set aside for several days, in a warm place, agitating occasionally, until the resin is practically dissolved, then strain through muslin, and add enough alcohol through the strainer to make the liquid measure 16 fluidounces.

This is $2\frac{1}{2}$ times the strength of the U. S. P. tincture, which may be prepared from the above by mixing in the proportion of 2 fluidounces with 3 fluidounces of alcohol.

Extract, Fluid, of Guarana.

Prepare according to the general process (see Extracts, Fluid), but using the drug in No. 80 powder, moistening $16\frac{3}{4}$ av.ounces of it with $3\frac{1}{4}$ fluidounces of menstruum, reserving the first $11\frac{1}{2}$ fluidounces of percolate and evaporating the remainder on a water bath. The menstruum is diluted alcohol. The product is to be assayed and made to contain 3.5 grams of alkaloids in 100 cc.; if it contains more than this proportion, enough diluted alcohol should be added to reduce it to this standard.—U. S. P.

Extract of Hemlock Spruce, Non-Alcoholic. (Concentrated Extract or Fluid Extract of Pinus Canadensis.)

The following corresponds in strength to that claimed for commercial preparations:

Pinus Canadensis, No. 40
 powderav.oz. 32
 Water, alcohol, each.....sufficient
 Glycerinfl.oz. 8

Mix 1 volume of alcohol with 2 of water, and exhaust the drug by the process of percolation. Distil the alcohol from the percolate, evaporate the remaining liquid to 8 fluidounces, and to the residue add the glycerin.

Extract, Fluid, of Hemlock Spruce. (Fluid Extract of Pinus Canadensis.)

Hemlock spruce bark, coarse
 powderav.oz. $16\frac{3}{4}$
 Diluted alcoholsufficient

Extract in the usual manner for fluid extracts (see Extracts, Fluid), reserving the first 14 fluidounces of percolate.

Extract of Henbane. (Extract of Hyoscyamus.)

Evaporate fluid extract of henbane in a porcelain dish by means of a water bath at a temperature not exceeding 50 deg. C., constantly stirring, until reduced to pilular consistence.

This extract is to be assayed and is to contain 3 per cent. of mydriatic alkaloids. If the extract should be found to contain more than this percentage, enough powdered sugar of milk should be added to reduce it to this standard.—U. S. P.

The Brit. Pharm. recognizes an Extract of Henbane, Green, which see.

The extract of henbane of the Germ. Pharm. is prepared like extract of belladonna, which see.

Extract of Henbane, Green.

Prepare like Extract of Belladonna, Green (which see), from the fresh leaves, flowering tops and young branches of the plant.—Brit. Pharm.

Extract, Fluid, of Henbane. (Fluid Extract of Hyoscyamus.)

Prepare according to the general process (see Extracts, Fluid), reserving the first 13 fluidounces of percolate obtained from $16\frac{3}{4}$ av.ounces of drug. The menstruum is a mixture of 2 volumes of alcohol and 1 of water. The weak percolate is to be evaporated at not above 50 deg. C. The product is to be assayed and made to contain 0.075 gram mydriatic alkaloids in 100 cc.; if it contains more than this proportion, enough of a mixture of 2 volumes of alcohol and 1 of water should be added to it to reduce it to this standard.—U. S. P.

Extract, Fluid, of Hops.

Prepare according to Process A (see Extracts, Fluid), using the drug in No. 20 powder, and a mixture of 5 volumes of alcohol with 3 of water as the menstruum.—N. F.

Extract, Fluid, of Horehound, Compound.

Horehound	av.oz. $8\frac{1}{2}$
Comfrey	av.oz. $4\frac{1}{4}$
Senega	av.oz. $2\frac{1}{8}$
Wild cherry	av.oz. $2\frac{1}{8}$
Alcohol, water, each.....	sufficient

Mix the drugs, reduce to moderately coarse powder, and extract in the usual manner for fluid extract (see Extracts, Fluid), using a mixture of 1 volume of alcohol and 3 of water as the menstruum.

Extract, Fluid, of Hydrangea. (Fluid Extract of Seven Barks.)

From the root of *Hydrangea arborescens*.

Prepare according to Process A (see Extracts, Fluid), using the drug in No. 60 powder, and a mixture of 3 volumes of alcohol and 2 of water as the menstruum.—N. F.

Extract of Ignatia (Extract of St. Ignatius' Bean.)

Procter's process:

St. Ignatius' beans.....	av.lb. 1
Water, alcohol, each.....	sufficient

Bruise the drug in an iron mortar until reduced to small fragments or very coarse powder, moisten with water in a covered vessel and apply heat cautiously until the tissues of the drug become soft and can be reduced to a pulpy mass. Mix this mass with about twice its bulk of alcohol, macerate in a closed vessel, in a warm place, for 24 hours, then place in a percolator and percolate with alcohol until 10 to 12 pints of percolate are obtained, or the drug is exhausted. Evaporate the percolate to soft extract consistency.

The yield is about 10 per cent.

Extract, Fluid, of Ipecac.

I.

Prepare according to the general process (see Extracts, Fluid), but using the drug in No. 80 powder, moistening $16\frac{3}{4}$ av.ounces of it with $5\frac{1}{2}$ fluidounces of menstruum, and reserving the first $13\frac{1}{2}$ fluidounces of percolate. The menstruum is a mixture of 3 volumes of alcohol and 1 of water. The weak per-

colate is to be evaporated at not above 50 deg. C. The product is to be assayed and made to contain 1.75 grams of alkaloids in 100 cc.; if it contains more than this proportion, enough of a mixture of 3 volumes of alcohol and 1 of water should be added to reduce it to this standard.—U. S. P.

II. Brit. Pharm. formula for liquid extract of ipecac:

Ipecac, No. 20 powder.....	av.oz. 15
Calcium hydrate (slaked lime)	av.oz. $1\frac{1}{2}$
Alcohol	sufficient

Moisten the drug with $5\frac{1}{2}$ fluidounces of alcohol, pack firmly in a percolator, and saturate the drug with alcohol. When the liquid begins to drop from the percolator, close the lower orifice, and set aside for 24 hours. Then percolate slowly until the drug is exhausted. Reserve the first $12\frac{1}{4}$ fluidounces of percolate, mix the calcium hydrate intimately with the marc, allow them to remain in contact for 24 hours, and then continue percolation as before until the drug is again exhausted. Recover the alcohol from the two weak percolates by distillation, and dissolve the extract obtained in the reserved portion of percolate. Assay the liquid for alkaloids, and to it add enough alcohol to make a liquid extract containing not less than 2 nor more than 2.25 grams of alkaloids in 100 cc., or from 2 to $2\frac{1}{4}$ gr. in 110 minims.

Extract, Fluid, of Jaborandi. (Fluid Extract of Pilocarpus.)

Prepare according to the general formula (see Extracts, Fluid), but using the drug in No. 40 powder, moistening $16\frac{3}{4}$ av.ounces of it with $5\frac{1}{2}$ fluidounces of menstruum, and reserving the first 12 fluidounces of percolate. The menstruum is diluted alcohol. The weak percolate is to be evaporated at not above 50 deg. C. The product is to be assayed and made to contain 0.4 grams of alkaloids in 100 cc.; if it contains more than this proportion, enough diluted alcohol should be added to it to

reduce it to this standard.—U. S. P. and Brit. Pharm.

Extract of Jalap.

I.

Prepare according to the general process (see Extracts), but moistening 1 av.pound of drug with $5\frac{1}{2}$ fluidounces of menstruum, percolating to exhaustion and evaporating the percolate to pilular consistence on a water bath. The menstruum is alcohol.—N. F. Appendix and U. S. P. 1890.

II.

Jalap, coarse powder.....av.oz. 8
Alcoholfl.oz. 38
Distilled waterfl.oz. 76

Macerate the drug with the alcohol for 7 days, express, filter the liquid, and evaporate the filtrate to soft extract. Macerate the marc with the water for 4 hours, again express, strain through flannel, evaporate the colature to soft extract, add the other extract, and evaporate the whole at a temperature not exceeding 60 deg. C. to a hard extract.—Brit. Pharm.

Extract, Fluid, of Jalap.

Prepare according to Process A (see Extracts, Fluid), using the drug in No. 60 powder, and alcohol as the menstruum.—N. F.

Extract, Fluid, of Jamaica Dogwood. (Fluid Extract of Piscidia.)

Jamaica dogwood, fine powderav.oz. $16\frac{3}{4}$
Glycerinfl.oz. $1\frac{1}{4}$
Alcohol, water, each.....sufficient

Moisten the drug with a mixture of the glycerin and $4\frac{1}{2}$ fluidounces of alcohol, pack in a percolator, and exhaust with a mixture of 3 volumes of alcohol and 1 of water. Reserve the first 13 fluidounces, evaporate the remainder to soft extract, dissolve this in the reserved portion, and add enough of the second menstruum used for extraction, to make the product measure 16 fluidounces.—D. modified.

Extract, Fluid, of Juniper. (Fluid Extract of Juniper Berries.)

Prepare according to Process A (see

Extracts, Fluid), using the drug in No. 10 powder, and diluted alcohol as the menstruum.—N. F.

Extract, Fluid, of Kava Kava. (Fluid Extract of Ava or Kava.)

From the root of Piper methysticum.

Prepare according to Process A (see Extracts, Fluid), using the drug in No. 40 powder, and a mixture of 3 volumes of alcohol and 2 of water as the menstruum.—N. F.

Extract of Kola.

Kola, coarse powder.....av.oz. 8
Alcohol, distilled water,
eachsufficient

Macerate the drug with a mixture of 28 fluidounces of alcohol and $11\frac{1}{2}$ of water for 2 days and express. Macerate the residue with $18\frac{1}{2}$ fluidounces of alcohol and $7\frac{1}{2}$ of water for 2 days and again express. Mix the two liquids, filter, and evaporate the filtrate on a water bath to dryness.—D.

The yield is about 8 or $8\frac{1}{2}$ per cent.

Extract, Fluid, of Kola. (Fluid Extract of Sterculia—Liquid Extract of Kola.)

I. Prepare according to Process B (see Extracts, Fluid), using the drug in No. 20 powder, a mixture of 1 fluidounce of glycerin, 4 of alcohol and 11 of water being the first menstruum (for $16\frac{3}{4}$ av.ounces of drug), and a mixture of 1 volume of alcohol and 3 of water the second menstruum.—N. F.

II. Exhaust the drug in No. 40 powder by percolation with a mixture of 9 volumes of alcohol and 5 of water, using $16\frac{3}{4}$ av.ounces of drug to make 16 fluidounces of product, and setting the first $13\frac{1}{2}$ fluidounces of liquid aside as the reserve percolate.—Brit. Form.

Extract, Fluid, of Koussou or Cusso. (Fluid Extract of Brayera U. S. P. 1880.)

Prepare according to the general process (see Extracts, Fluid), but using the drug in No. 40 powder. The menstruum is alcohol.—N. F. Appendix and U. S. P. 1890.

Extract, Fluid, of Lactucarium.

Lactucarium (German or English preferred) coarse piecesav.oz. $4\frac{1}{4}$
 Stronger etherfl.oz. 5
 Alcohol, water, each.....sufficient

Add the lactucarium to the ether contained in a tared flask having the capacity of 24 fluidounces, and let it macerate for 24 hours; then add 12 fluidounces of water, and shake the mixture well. Fit a bent glass tube into the neck of the flask, and, having immersed the flask in hot water, recover the ether by distillation. When all the ether has distilled over, remove the tube, and, after thoroughly shaking the contents of the flask, continue the heat for $\frac{1}{2}$ hour. Let the mixture cool, add $4\frac{1}{4}$ av.ounces (5 fluidounces) of alcohol, and enough water to make the whole mixture weigh 20 av.ounces; after maceration for 24 hours, with occasional agitation, express and filter the liquid. Return the dregs to the flask and macerate them with $8\frac{1}{4}$ av.ounces of a mixture of alcohol and water made in the proportion of 1 part of alcohol to 3 of water by weight; repeat the maceration 2 or 3 times, successively, with fresh portions of the mixture, until the dregs are tasteless, or nearly so. Mix, and filter the liquids thus obtained, and concentrate them, by means of a water bath (the first expressed liquid by itself), until the combined weight of the liquids is $2\frac{1}{2}$ av.ounces; mix the liquids, add $1\frac{3}{4}$ av.ounces of alcohol, and let the mixture cool in the evaporating vessel, stirring the mixture frequently, and during the intervals keeping the vessel well covered. When cool, add enough alcohol to make the mixture weigh $4\frac{1}{4}$ av.ounces, transfer the liquid to a flask, and add enough water to make the mixture measure 4 fluidounces, using the water so required to rinse the evaporating vessel. Shake the mixture occasionally, during several hours (and frequently, if a portion of the precipitate is found to be tenacious), and when a uniform

mixture results, set it aside for 24 hours, so that any precipitate formed may subside. Decant the clear liquid, transfer the precipitate to a filter, and, after thoroughly draining it into the decanted liquid, wash it with a mixture of alcohol and water made in the proportion of 3 parts of alcohol to 4 of water, by weight, until the washings pass tasteless. Concentrate the washings, by evaporation, to a syrupy consistence, mix with the decanted liquid, and add enough of the last-named mixture of alcohol and water to make the whole measure 4 fluidounces. Lastly, after 24 hours, having meanwhile shaken the fluid extract occasionally, filter it through paper.

This preparation was recognized in the U. S. P. 1880, but was rejected in the U. S. P. 1890, which adopted instead a tincture of lactucarium, which see. The revised N. F. admitted all the dropped preparations of the U. S. P. 1880, the above included. Owing to the fact that the tincture of lactucarium is the superior preparation, and that these preparations are used only for making the syrup of lactucarium, which is more readily and satisfactorily made from the tincture, it is the tincture only which should be recognized.

**Extract, Fluid, of Ladies' Slipper.
(Fluid Extract of Cypripedium.)**

Prepare according to the general process (see Extracts, Fluid), but moistening $16\frac{3}{4}$ av.ounces of drug with $5\frac{1}{2}$ fluidounces of menstruum, reserving the first $13\frac{1}{2}$ fluidounces of menstruum, and evaporating the remainder on a water bath. The menstruum is diluted alcohol.—U. S. P.

Extract, Fluid, of Lavender, Comp'd.

The article sold commercially under this title may be prepared as follows:

Cassia cinnamon.....av.oz. $2\frac{3}{4}$
 Nutmeggr. 580
 Red saunders.....gr. 580
 Clovegr. 290
 Oil of lavender flowers....fl.oz. 1
 Oil of rosemary.....fl.dr. 2

Alcoholfl.oz. 11
 Waterfl.oz. 4
 Diluted alcoholsufficient
 Reduce the drugs to coarse powder; add the oils to the alcohol, add the water and with this mixture extract the drugs by any suitable process for fluid extracts, so as to obtain 16 fluidounces of product, adding diluted alcohol, if necessary, to make up the requisite volume.

The product is 8 times the strength of the compound tincture, which latter may be prepared from it by mixing 2 fluidounces of it with 10 fluidounces of alcohol and 4 fluidounces of water.

Extract of Licorice. (Succus or Extractum Liquiritiæ.)

I. Prepare according to the general process (see Extracts), but using the drug (licorice root) in No. 20 powder, moistening 1 av. pound of it with 15 fluidounces of menstruum, percolating to exhaustion, evaporating the percolate in a tared porcelain dish, by means of a water bath, to pilular consistence and while the mass is still warm, incorporating with it 5 per cent. of its weight of glycerin. The menstruum for 1 av. pound of drug is a mixture of 2½ fluidounces of ammonia water with 46 fluidounces of distilled water, the percolation to be continued with distilled water.—U. S. P.

II.

Extract of licorice, in sticks,
 Water, eachsufficient

Put a layer of well-washed rye-straw over the bottom of a keg or other suitable tall vessel. Then put a single layer of sticks of extract, broken into coarse pieces, over it. Continue to put in alternate layers of straw and extract until the vessel is full, or the whole of the extract has been disposed of. Fill the vessel with cold water, and allow it to remain for 3 days. Then draw off the solution, which has formed, by means of a faucet, or siphon, or otherwise, refill the vessel with cold water, and proceed as before. Mix the several solutions obtained, allow any suspended

matter to subside, decant the clear solution, and strain the remainder without pressure. Finally evaporate the liquid on a water bath to the consistence of a pilular extract.

Excelsior may be substituted for the straw. The addition of a small quantity of salicylic acid or formaldehyde solution will prevent fermentation of the aqueous liquid.

Glycerite of licorice, which see, is a better preparation than either of the above, is more easily prepared, and is more convenient to use.—N. F.

III.

Licorice root, No. 20 powderav.oz. 16
 Distilled waterfl.oz. 77

Mix the drug with one-half of the water, macerate for 24 hours, strain, express, mix the marc with the remainder of the water, macerate for 6 hours, strain and express again, mix the two liquids, heat to 100 deg. C., strain through flannel, and evaporate to soft extract.—Brit. Pharm.

IV.

Licorice root, cut.....av.oz. 8
 Distilled watersufficient

Dry the livorice, reduce it to coarse powder, macerate with 24 fluidounces of water for 12 hours, and express; mix the residue with 16 fluidounces of hot water, macerate for one hour and again express. Mix the two liquids, add some filter paper pulp or scraps of filter paper, boil for not less than 15 minutes, removing the scum, and filter. This filtrate must be returned to the filter until it is absolutely clear. Then evaporate to the consistence of thick honey, set it aside in a cool place for two days, dissolve in 2 parts of water, filter again, and evaporate on a water bath to thick extract.—D.

Inasmuch as the liquids obtained or produced in the manufacture of this preparation "sour" quite easily this extract is best made during the cool seasons of the year, the different opera-

tions being performed as rapidly as possible.

The yield from Russian licorice is 35 to 38 per cent., from Spanish, 20 to 25 per cent.

V.

Russian licorice, coarse

powderav.oz. 8

Alcoholfl.oz. 9

Watersufficient

Pour 40 fluidounces of cold water over the licorice, allow to stand for 4 hours, stirring frequently, and then express. Extract the press cake with 24 fluidounces of boiling water and again express. Mix the two liquid extracts and at once.

Evaporate to 4 av. ounces, and add to the solution while hot the alcohol, and allow to stand for 24 hours. Then filter through paper and from the filtrate distil off 5 fluidounces. Evaporate the residue to a medium thick extract.

The extract is completely soluble in water. The yield is about 18 to 20 per cent. It is necessary, particularly in summer, to perform the operation rapidly; by beginning at 6 in the morning one can be ready by midday to go on with the evaporation and the alcohol can be added by evening.

Extract of Licorice, Pure.

See Extract of Licorice, No. I.

Extract of Licorice, Purified.

See Extract of Licorice, No. II.

Extract, Fluid, of Licorice.

Pour $6\frac{1}{2}$ fluidounces of boiling water upon $16\frac{3}{4}$ av. ounces of drug, in No. 20 powder, contained in a suitable vessel and allow it to stand for 24 hours. Pack the moistened powder loosely in a metallic percolator, pour boiling water upon it, and allow percolation to proceed, adding boiling water until the drug is exhausted. Evaporate the percolate at a moderate heat until it measures $7\frac{1}{4}$ fluidounces, when cool, add $7\frac{1}{4}$ fluidounces of alcohol, mix well, and set aside for 3 days. After filtering the liquid, distil it until 8 fluid-

ounces of distillate have been obtained; transfer the liquid in the still to a suitable container, add 4 fluidounces of glycerin, $6\frac{1}{2}$ fluidrams of ammoniac water, $3\frac{1}{4}$ fluidounces of alcohol, and enough water to make 16 fluidounces.—

U. S. P.

II. Brit. Pharm. for liquid extract of licorice:

Licorice root, No. 20 pow-

derav.oz. 16

Distilled waterfl.oz. 77

Alcoholsufficient

Mix the drug with half of the water, macerate for 24 hours, strain and express, mix the marc with the remainder of the water, macerate for 6 hours, again strain and express; mix the two liquids, heat to 100 deg. C., strain through flannel, evaporate the colature until it has a sp. gr., when cold, of 1.200, add to this one-fourth of its volume of alcohol, let the mixture stand 12 hours, and filter.

Extract, Fluid, of Lily-of-the-Valley Flowers. (Fluid Extract of Convallaria Flowers.)

Prepare according to Process A (see Extracts, Fluid), using the drug in No. 40 powder, and diluted alcohol as the menstruum.—N. F.

Extract, Fluid, of Lily-of-the-Valley Root. (Fluid Extract of Convallaria.)

Prepare according to the general process (see Extracts, Fluid), reserving the first 13 fluidounces of percolate (from $16\frac{3}{4}$ av. ounces of drug), and evaporating the remainder on a water bath. The menstruum is a mixture of 13 volumes of alcohol and 7 of water.—U. S. P.

Extracts, Liquid.

A class of preparations by the name of "liquid extracts" are recognized by the British Pharmacopoeia and British Formulary. These are, in general, of the same strength as the fluid extracts of this country, and such of the liquid extracts as are recognized in this for-

mulary are mentioned under the title of "fluid extracts."

Sometimes the so-called "fluid extracts" of resinous bodies, myrrh, benzoin, etc., which are really concentrated tinctures, are called "liquid extracts."

Extract, Fluid, of Lobelia.

Extract the drug, in No. 50 powder, by the usual process (see Extracts, Fluid), but moistening $16\frac{3}{4}$ av. ounces of drug (the herb), in No. 50 powder, with $5\frac{1}{2}$ fluidounces, reserving the first $14\frac{1}{2}$ fluidounces of percolate, and evaporating the remainder at not above 50 deg. C. The menstruum is a mixture of 11 volumes of 36 per cent. acetic acid with 29 of water.—U. S. P.

The preparation of the U. S. P. 1890 was made with diluted alcohol.

Extract, Fluid, of Lobelia, Comp'd.

Lobelia seed	av.oz.	$4\frac{1}{4}$
Lobelia herb	av.oz.	$4\frac{1}{4}$
Blood root	av.oz.	$4\frac{1}{4}$
Skunk cabbage root.....	av.oz.	$4\frac{1}{4}$
Diluted alcohol, to make...	fl.oz.	16

Exhaust the mixed drugs in powder by any suitable process for fluid extracts (see Extracts, Fluid). Most manufacturers make this preparation with $8\frac{1}{2}$ av. ounces of lobelia herb instead of herb and seed mixed—Eclectic.

Extract of Logwood.

Logwood, rasped	av.oz.	16
Water	pints	$9\frac{3}{4}$

Macerate the logwood with the water for 48 hours, then boil (avoiding the use of metallic vessels) until about one-half the water has evaporated, then strain the liquid while hot, and evaporate to dryness.

A suitable vessel for boiling is an enameled-iron dish, providing the enamel be unbroken.

This extract is not to be confused with the commercial extract which is decidedly inferior to the above for medicinal purposes.—U. S. P.

Extract, Fluid, of Logwood. (Liquid Extract of Logwood.)

Logwood, unfermented, No.	
16 powder	av.oz. $16\frac{3}{4}$

Alcohol	fl.oz.	$2\frac{1}{2}$
Distilled water.....	pints	6

Boil the logwood with 2 pints of the water in a covered copper or enameled pan for $\frac{1}{2}$ hour, strain, boil the residue with another 2 pints of the water for $\frac{1}{2}$ hour, strain, and boil the residue again as before with the remainder of the water, and again strain, mix the three liquids, evaporate over a water bath (or preferably in a vacuum apparatus) until the product measures $13\frac{1}{2}$ fluidounces, add the alcohol, set aside for 7 days, and then decant or siphon off the clear liquid from any sediment which may have deposited.—Brit. Form.

Extract of Lupulin.

Lupulin	av.oz.	4
Alcohol	sufficient	

Place the drug loosely in a percolator, cover it with alcohol, allow to stand for 1 hour, then gradually add alcohol until 32 fluidounces of percolate are obtained or the drug is practically exhausted. Evaporate the percolate on a water bath to soft extract consistency.

Extract, Fluid, of Lupulin.

Prepare according to the general process (see Extracts, Fluid), but packing the drug in the percolator without the preliminary moistening. The reserve percolate from $16\frac{3}{4}$ av. ounces of drug is $14\frac{1}{2}$ fluidounces; the menstruum is alcohol. The drug is to be used in its ordinary commercial condition, without further comminution. The drug is packed dry in the percolator because of its large proportion of extractive matter.—U. S. P.

Extract of Malt. (Extractum Byni.)

I.

Malt, coarse powder, not	
finer than No. 12.....	av.oz. 67
Water	gal. $2\frac{1}{2}$

Upon the powder, contained in a suitable vessel, pour $\frac{1}{2}$ gallon of water (not warmed), and macerate for 6 hours. Then add 2 gallons of water, heated to about 30 deg. C., and digest for an hour at a temperature not exceeding 55 deg. C. Strain the mixture

with strong expression. Finally, by means of a water bath, or vacuum apparatus, at a temperature not exceeding 55 deg. C. evaporate the strained liquid rapidly to the consistence of thick honey.

Keep the product in well-closed vessels, in a cool place.—U. S. P. and N.

The above is Liebig's process for extract of malt. There are also other extracts of malt on the market, such as the numerous liquid extracts which are merely strong beers variously flavored.

There is also a fluid extract of malt which is recognized by the N. F. (see Extract, Fluid, of Malt). Dry extract of malt is also to be had which is made by evaporating the thick (the above) extract of malt.

The commercial brands of extract of malt vary greatly in quality; some of them are grossly adulterated with glucose.

II.

Barley malt, freshly
crushedav.lbs. 4
Waterpints 22

Into a suitable vessel pour the water previously heated to 65 deg. C., add the malt, constantly stirring meanwhile, macerate for 2 hours, draw off the liquid, and evaporate this in a vacuum apparatus at a temperature not exceeding 55 deg. C. to the consistence of thick honey.

The product is to be assayed.—Brit. Form.

This process is practically the same as the preceding.

III. Mattison's process:

The quantities given here are such as would be used upon a tolerably large scale; these may, of course, be reduced as desired.

Use a tube or churn of a capacity of 5 gallons and having a perforated false bottom. Pour into it 3½ gallons of water of a temperature of about 76 to 78 deg. C., then add ½ peck of barley malt, coarsely ground, gradually stirring it in well. Cover the vessel and

set away in a warm place, and allow to remain perfectly at rest for 3 or 4 hours, taking care that the temperature does not fall below 65 deg. C. This is the process of mashing.

At the end of the allotted period of time, open the stop-cock below, draw off the fluid; now sprinkle over the top of the malt some water a little above the temperature of the extract, and draw off the fluid below, until the malt is practically exhausted. Evaporate the fluid by means of a water bath to thick consistence.

The tub or churn must be kept perfectly clean. Once a week it should be washed with alkaline water and when not in use it should be kept filled with lime water.

Extract, Fluid, of Malt.

Maltav.oz. 16
Alcohol, water, each.....sufficient

Reduce the malt to coarse powder, not finer than No. 20. Moisten it with 7½ fluidounces of a mixture of 1 volume of alcohol and 3 volumes of water, and set it aside, well-covered, until it has ceased to swell. Then mix it with as much of the menstruum as it will take up without dripping, pack it uniformly, but without pressure, in a percolator, and add enough of the before-mentioned menstruum to cover it. When the liquid begins to drop from the orifice, close the latter, and allow the contents to macerate during 24 hours, adding from time to time more menstruum, if necessary, to keep the malt just covered. Then remove the cork and allow the percolation to proceed until the percolate weighs 12 av. ounces. Set this aside, well-corked, until any suspended matters have been deposited. Then decant the clear liquid and preserve it for use.

The product thus obtained may be regarded as being practically equivalent to the drug in the proportion of minim for grain, the apparent excess of dissolved matters present in the first portions of the percolate being about offset

by the soluble matters still remaining in the drug, when the percolation is interrupted.—N. F.

Extract of Malt with Alternatives.

Calcium bromid	gr. 160
Sodium bromid	gr. 96
Potassium iodid	gr. 160
Water, hot	fl.oz. 1
Extract of malt, to make.....	fl.oz. 16

Dissolve the salts in the water, and add to the extract.

Extract of Malt with Beef.

Extract of beef, Liebig's.....	av.oz. ½
Water	fl.oz. 1
Extract of malt, to make.....	fl.oz. 16

Dissolve the extract of beef in the water and mix the malt extract.

Extract of Malt with Beef, Wine and Iron.

Extract of malt.....	fl.oz. 8
Beef, wine and iron.....	fl.oz. 8

Extract of Malt with Cascara Sagrada.

Fluid extract of cascara sagrada	fl.oz. 2
Extract of malt.....	fl.oz. 14

It is best to use the bitterless fluid extract of cascara sagrada.

Each tablespoonful represents 30 gr. of cascara sagrada.

Extract of Malt with Cod Liver Oil. (Emulsion of Cod Liver Oil with Malt—Malted Emulsion of Cod Liver Oil.)

I.

Cod liver oil	fl.oz. 8
Mucilage of dextrin.....	fl.oz. 2
Extract of malt	fl.oz. 6

To the mucilage of dextrin contained in a suitable bottle, add the extract of malt, and mix them thoroughly by agitation, and then gradually add the cod liver oil, first in small portions, agitating each time until the last added portion is perfectly incorporated.—N. F.

Extract of malt, most suitable for this preparation, should have about the same consistence as Peru balsam, at a temperature of 15 deg. C.

II.

Cod liver oil.....	fl.oz. 3
Extract of malt.....	fl.oz. 17

Warm the extract to 45 deg. C., pour

into a warm mortar, and incorporate the oil gradually and with constant trituration.—Brit. Form.

III.

Cod liver oil.....	fl.oz. 8
Extract of malt.....	fl.oz. 8
Yolk of two eggs,	
Tragacanth, powder	gr. 15
Water, warm	fl.dr. 4
Spirit of lemon.....	drops 15
Spirit of bitter almond....	drops 15

Mix the extract with the warm water to thin it. Beat yolks in a mortar with the tragacanth and add the oil and extract alternately, and lastly the spirits which latter may be varied to suit the taste.

IV.

Extract of malt.....	fl.oz. 8
Cod liver oil	fl.oz. 8
Oil of wintergreen.....	drops 20
Oil of bitter almonds.....	drops 5

Rub the cod liver oil very gradually and thoroughly with the malt extract, then add the flavoring oils. If the mixture becomes too thick at any time, thin by the addition of a little water. It may be flavored in any other desired manner.

V.

Cod liver oil	fl.oz. 8
Tragacanth, powder	gr. 25
Extract of malt	fl.oz. 6
Water	fl.oz. 2

Triturate the gum with the malt extract until well mixed, then add the oil gradually with uninterrupted trituration, and then add the water.

VI. Commercial combinations of malt extract with cod liver oil usually contain only from 20 to 30 per cent. by volume of the oil instead of 38 to 50 per cent. as in the preceding.

Malt extract is best combined with fixed oils by first warming it sufficiently to work easily as by using a warm mortar.

Extract of Malt with Cod Liver Oil and Hypophosphites.

Calcium hypophosphite	gr. 64
Sodium hypophosphite	gr. 48
Potassium hypophosphite.....	gr. 32
Glycerin	fl.oz. 1

Water, hotfl.oz. 1
 Extract of malt with cod
 liver oilfl.oz. 14

Triturate the hypophosphites to a fine powder, dissolve them as nearly as possible in the water and glycerin, and incorporate with malt extract and oil.

Each tablespoonful contains $4\frac{1}{2}$ gr. of the hypophosphites.

Extract of Malt with Cod Liver Oil and Hypophosphites of Calcium. (Extract of Malt with Cod Liver Oil and Lime—Calcarated Extract of Malt.)

Extract of malt.....fl.oz. 8
 Cod liver oilfl.oz. 4
 Mucilage of dextrin.....fl.oz. 1
 Calcium hypophosphitegr. 192
 Waterfl.oz. 3

Mix the extract with the mucilage, add the oil gradually with constant trituration, then incorporate the water, having previously dissolved the hypophosphite in the latter.

Each tablespoonful contains 6 gr. of the hypophosphite.

Extract of Malt and Cod Liver Oil and Iodid of Iron.

Extract of malt.....fl.oz. 8
 Cod liver oilfl.oz. 4
 Mucilage of dextrin.....fl.oz. 1
 Syrup of iron citro-iodid...fl.oz. $\frac{1}{2}$
 Waterfl.oz. $2\frac{1}{2}$

Triturate the extract with the mucilage, gradually add the oil with constantly stirring, and then incorporate the syrup and water.

Each tablespoonful represents 1 gr. of tasteless iron iodid.

Extract of Malt with Cod Liver Oil and Iron. (Ferrated Extract of Malt with Cod Liver Oil.)

I.

Cod liver oil.....fl.oz. 6
 Extract of malt.....fl.oz. 6
 Syrup of soluble saccharated ironfl.oz. 4

Add the oil gradually to the extract by trituration in a mortar until an emulsion is formed, then add the syrup.

II.

Solution of dialyzed iron...fl.dr. $5\frac{1}{2}$
 Extract of malt with cod
 liver oil, to make.....fl.oz. 16
 Mix well by trituration.

III.

Citrate of iron and ammoniumgr. 64

Water, warmfl.dr. 4

Extract of malt with cod
 liver oilfl.oz. $15\frac{1}{2}$

Dissolve the iron salt in the water and incorporate this solution with malt extract and oil.

IV.

Iron phosphate, soluble.....gr. 64

Water, warmfl.dr. 4

Extract of malt with cod
 liver oilfl.oz. $15\frac{1}{2}$

Prepare like the preceding.

V. Replace the iron phosphate in IV. with soluble iron pyrophosphate.

Extract of Malt with Cod Liver Oil and Iron and Quinine Citrate.

Extract of malt.....fl.oz. 8

Cod liver oilfl.oz. 4

Mucilage of dextrin.....fl.oz. 1

Iron and quinine citrate....gr. 64

Waterfl.oz. 3

Mix the extract with mucilage, add the oil gradually with constant trituration, then incorporate the water, having previously dissolved the citrate in a portion of the water by the aid of a gentle heat.

Each tablespoonful contains 2 gr. of iron and quinine citrate.

Extract of Malt with Cod Liver Oil and Pancreatin. (Malt Extract with Pancreatized Cod Liver Oil.)

I.

Cod liver oil.....fl.oz. 6

Waterfl.oz. 2

Extract of malt.....fl.oz. 8

Pancreatin, puregr. 20

Sodium chloridgr. 40

Sodium bicarbonategr. 60

Oil of pimento.....sufficient

Dissolve the pancreatin and two salts in the water, add the oil, and keep at a temperature of about 32 deg. C. for 3 hours, stirring occasionally. Put the malt extract in a mortar, add the pancreatized oil gradually with constant stirring, and flavor the whole with oil of pimento (or other suitable flavoring).

II. In this preparation, the oil is not

first pancreatized as in the foregoing formula:

Pancreatin, saccharatedgr. 64
Extract of malt with cod
liver oilfl.oz. 16

Triturate the pancreatin to fine powder, add a small portion of the extract with oil, mix well, and add the remainder.

Extract of Malt with Cod Liver Oil, Pancreatin and Pepsin.

Pancreatin, saccharatedgr. 64
Pepsin, saccharatedgr. 128
Extract of malt with cod
liver oilfl.oz. 16

Triturate the pepsin and pancreatin together to fine powder, add a portion of the malt extract with oil, mix well, and add the remainder.

Each tablespoonful contains 2 gr. of pancreatin and 4 of pepsin.

Extract of Malt with Cod Liver Oil and Pepsin.

Pepsin, saccharatedgr. 128
Extract of malt with cod
liver oilfl.oz. 16

Triturate the pepsin to fine powder, add a portion of the malt extract with oil, mix well, and add the remainder.

Each tablespoonful contains 4 gr. of pepsin.

Extract of Malt with Cod Liver Oil and Phosphorus.

I.

Phosphorusgr. 1
Cod liver oil.....fl.oz. 24
Extract of malt.....fl.oz. 24

Dissolve the phosphorus by the heat of a water bath in 4 fluidounces of the oil in a stoppered bottle, shake thoroughly and when still warm incorporate the extract of malt, then add the remainder of the oil slowly to form an emulsion.

II. Instead of using phosphorus as above, 100 minims of phosphorated oil may be employed, this latter to be added to the cod liver oil, and this mixture then to be added to the extract of malt in the usual manner.

III. Instead of using either free phosphorus or phosphorated oil, solu-

tion of phosphorus N. F. may be employed as according to the following:

Solution of phosphorus....fl.oz. 1
Extract of malt with cod
liver oilfl.oz. 15
Mix well by trituration.

Each tablespoonful contains about 1/100 gr. of phosphorus.

Extract of Malt with Gentian and Iron Chlorid.

Extract of malt.....fl.oz. 8
Elixir gentian and iron
chloridfl.oz. 8

Extract of Malt and Hops. (Compound Extract of Malt—Sometimes called Extract of Malt, plain.)

I.

Hops, freshpart 1
Maltparts 9
Watersufficient

Make into an extract like extract of malt, which see.

II.

Fluid extract of hops.....fl.oz. ½
Extract of malt.....fl.oz. 15½
Mix well.

Extract of Malt with Hypophosphites.

Calcium hypophosphitegr. 64
Sodium hypophosphitegr. 48
Potassium hypophosphitegr. 32
Water, hotfl.oz. 1
Glycerinfl.oz. 1
Extract of malt.....fl.oz. 14

Rub the salts in a mortar with the water until dissolved or nearly so, add the glycerin and finally the malt extract.

The above is also made to contain 32 gr. of iron hypophosphite.

Each tablespoonful contains 4½ gr. of hypophosphites.

Extract of Malt with Hypophosphite of Calcium. (Extract of Malt with Lime—Calcarated Extract of Malt.)

Calcium hypophosphitegr. 128
Water, hotfl.oz. 1
Glycerinfl.oz. 1
Extract of malt.....fl.oz. 14

Triturate the calcium salt to fine powder, dissolve as nearly as possible in the water and glycerin, and add the malt extract.

Each tablespoonful contains 4 gr. of hypophosphite.

Extract of Malt and Iron. (Ferrated Extract of Malt.)

I.
Iron pyrophosphategr. 64
Water, warmfl.dr. 4
Extract of malt, to make...fl.oz. 16
Dissolve the iron salt in the water and incorporate the solution with the malt extract.

This is the usual method of preparing ferrated extract of malt.

II.
Solution of dialyzed iron...fl.dr. 5½
Extract of malt, to make...fl.oz. 16

III.
Citrate of iron and ammoniumgr. 64
Water, warmfl.dr. 4
Extract of malt.....fl.oz. 15½
Dissolve the iron salt in the water and add the extract.

IV. Instead of iron citrate in the last formula, soluble iron phosphate may be employed.

V.
Tincture of iron citrochloridfl.dr. 4
Extract of malt.....fl.oz. 15½

Extract of Malt with Iron and Quinine Citrate.

Citrate of iron and quinine..gr. 128
Water, warmfl.oz. 1
Extract of malt.....fl.oz. 15

Dissolve the iron and quinine salt in the water and incorporate with the malt extract.

Each tablespoonful contains 4 gr. of iron and quinine citrate.

See also Extract of Malt with Phosphate of Iron and Quinine.

Extract of Malt with Iron Iodid.

Extract of malt.....fl.oz. 15½
Syrup of iron citro-iodid...fl.oz. ½
Mix well.

Each tablespoonful represents 1 gr. of tasteless iron iodid.

Extract of Malt with Iron, Quinine and Strychnine Citrate.

Strychnine sulfategr. ⅝
Distilled water, hot.....fl.dr. 2

Extract of malt with iron and quinine citrate, enough to make.....fl.oz. 16

Dissolve the strychnine salt in the water and incorporate this solution with the compound malt extract.

Each tablespoonful contains 4 gr. of iron and quinine citrate and 1/50 gr. of strychnine sulfate.

Extract of Malt with Pancreatin.

Pancreatin, saccharated.....gr. 64
Extract of malt.....fl.oz. 16

Triturate the pancreatin and a small portion of the extract to a smooth paste and add the remainder of the extract.

Each tablespoonful contains 2 gr. of pancreatin.

Extract of Malt with Pancreatin and Pepsin.

Pancreatin, saccharatedgr. 64
Pepsin, saccharatedgr. 128
Simple syrupfl.oz. 1
Extract of malt, to make..fl.oz. 16

Triturate the pepsin and pancreatin to a smooth paste with the syrup, then add the malt extract.

Each tablespoonful contains 2 gr. of pancreatin and 4 of pepsin.*

Extract of Malt with Pepsin.

Pepsin, puregr. 64
Hydrochloric acidfl.dr. 1
Glycerinfl.oz. 1
Waterfl.oz. 1
Extract of malt.....fl.oz. 14

Add the acid to the water and in this dissolve the pepsin, then add the glycerin and finally the malt extract.

Each tablespoonful contains 2 gr. of pepsin.

Extract of Malt with Phosphate of Iron and Quinine.

Elixir of iron phosphate and quininefl.oz. 8
Extract of malt.....fl.oz. 8
Mix well.

See also Extract of Malt with Iron and Quinine Citrate.

Extract of Malt with Phosphate of Iron, Quinine and Strychnine.

Elixir of iron phosphate, quinine and strychnine...fl.oz. 8
Extract of malt.....fl.oz. 8

Extract of Malt with Syrup Phosphates, Compound.

Compound syrup of the
phosphatesfl.oz. 8
Extract of malt.....fl.oz. 8

Extract of Malt with Wine of Coca.

Extract of malt.....fl.oz. 8
Wine of cocafl.oz. 8

Extract of Malt with Wine of Pepsin.

Extract of malt.....fl.oz. 8
Wine of pepsin.....fl.oz. 8

Extract of Malt with Yerba Santa.

Fluid extract of yerba
santafl.oz. 1
Solution of potassa.....fl.dr. 4
Extract of malt.....fl.oz. 14½

Mix the fluid extract with the solution and incorporate the extract.

Extract of Manaca, Fluid.

Manaca root, fine powder.av.oz. 16¾
Glycerinfl.oz. 2½
Alcohol, water, each.....sufficient

Moisten the drug with a mixture of the glycerin and 3¾ fluidounces of alcohol, then pack in a percolator and exhaust by the usual process of percolation, using as a menstruum a mixture of 3 parts by volume of alcohol and 1 of water. Reserve the first 12 fluidounces of percolate, evaporate the weak percolate to 4 fluidounces and mix with the reserve percolate.—D. modified.

Extract of Mandrake. (Extract of May-Apple or Podophyllum.)

Prepare according to the general process (see Extracts), using the drug in No. 60 powder and obtaining an extract of pilular consistence. The menstruum is a mixture of 4 volumes of alcohol and 1 of water.—N. F. Appendix and U. S. P. 1890.

Extract, Fluid, of Mandrake. (Fluid Extract of May-Apple or Podophyllum.)

Prepare according to the general process (see Extracts, Fluid), but moistening 16¾ av. ounces of drug with 5 fluidounces of menstruum, reserving the first 13½ fluidounces of percolate, and evaporating the remainder on a water

bath. The menstruum is a mixture of 4 volumes of alcohol and 1 of water.—U. S. P.

Extract, Fluid, of Mangifera.

Mangifera bark, moderately fine powder.....av.oz. 21
Glycerinfl.oz. 24
Waterfl.oz. 72

Macerate the drug with the glycerin mixed with 40 fluidounces of water for 24 hours, strain with expression, macerate the residue with 32 fluidounces of water for 24 hours, strain again with expression, mix the two liquids, filter them, evaporate the filtrate on a water bath to 13 fluidounces, and to the latter add 3 fluidounces of alcohol.

This drug is very difficult to extract; the above is an easy process and furnishes a very good product.

Extract, Fluid, of Matico.

Prepare according to the general process (see Extracts, Fluid), but using the drug in No. 40 powder, moistening 16¾ av. ounces of it with 5 fluidounces of menstruum, reserving the first 13½ fluidounces of percolate and evaporating the remainder on a water bath. The menstruum is a mixture of 3 volumes of alcohol and 1 of water.—U. S. P.

Extract of Mezereum.

Make according to the general process (see Extracts), using alcohol as the menstruum.—U. S. P. 1880 and Germ. Pharm. (1st) modified.

Extract, Fluid, of Mezereon.

Prepare according to the general process (see Extracts, Fluid), but moistening 16¾ av. ounces of drug with 6½ fluidounces of menstruum, and reserving the first 14½ fluidounces of percolate. The menstruum is a mixture of 4 volumes of alcohol and 1 of water.—U. S. P.

Extract, Fluid, of Mullein. (Fluid Extract of Verbascum.)

From the leaves and flowers of Verbascum Thapsus.

Prepare according to Process A (see

Extracts, Fluid), using the drug in No. 20 powder, and diluted alcohol as the menstruum.—N. F.

Extract, Fluid of Nettle Root.
(Fluid Extract of *Urtica*.)

From the root of *Urtica dioica*.

Prepare according to Process A (see Extracts, Fluid), using the drug in No. 40 powder, and diluted alcohol as the menstruum.—N. F.

Extract of Nux Vomica. (Extractum Strychni.)

I.

Nux vomica, No. 20 powderav.oz. 16
Acetic acid, 36 p. c.fl.oz. 8
Alcohol, water, and sugar of milk (dried and in fine powder), eachsufficient

Mix the acid with 20 fluidounces of distilled water and having moistened the drug with 6 fluidounces of this menstruum, pack it moderately in a cylindrical glass percolator; then add enough menstruum to saturate the drug and leave a stratum above it. When the liquid begins to drop from the percolator, close the lower orifice, and, having closely covered the percolator, macerate for 48 hours. Then allow percolation to proceed slowly, gradually adding, first, the remainder of the menstruum, and then water, until the percolate passes but faintly imbued with bitterness and the drug is exhausted. Reserve the first 12 fluidounces of percolate and having heated the remainder to boiling, filter, and evaporate the filtrate to soft extract; dissolve this in the reserved portion and add enough distilled water to make the liquid measure 14 fluidounces. To the liquid thus obtained, add 46 fluidounces of alcohol, shake the mixture well, and set it aside for 24 hours, with occasional agitation. Filter the liquid through paper, and wash the residue in the filter with a mixture of 3 volumes of alcohol and 1 of water until the washings are only faintly bitter. Evaporate the filtrate and washings in a porcelain dish on a water bath to dryness. Assay the percentage

of strychnine in this extract and add enough well-dried sugar of milk to bring the percentage of strychnine in the final dried extract down to 5 per cent. of the total weight. Reduce to fine powder, mix well, and keep in small, well-stoppered vials.—U. S. P.

II. Sixteen fluidounces of liquid extract of nux vomica is to be converted into 5 av. ounces of extract by distilling off the alcohol and adding sugar of milk.—Brit. Pharm.

The product should contain 5 per cent. of strychnine.

This extract has about $\frac{2}{3}$ the alkaloidal strength of the extract of the Brit. Pharm. 1885.—Brit. Pharm.

III.

Nux vomica, coarse powderav.oz. 16
Alcohol, water, eachsufficient

Macerate the drug with a mixture of $25\frac{1}{2}$ fluidounces of alcohol and $8\frac{1}{2}$ of water for 24 hours at a temperature not exceeding 40 deg. C., agitating occasionally, express, macerate the residue in the same manner with a mixture of $19\frac{1}{2}$ fluidounces of alcohol and $6\frac{1}{2}$ of water, again express, mix the two liquids, let stand for several days, filter, and evaporate the filtrate to dryness.—Germ. Pharm.

Extract, Fluid, of Nux Vomica.

I.

Nux vomica, No. 40 powderav.oz. $16\frac{3}{4}$
Acetic acid, 36 per cent.fl.dr. $6\frac{1}{2}$
Alcohol, water, eachsufficient

Mix the alcohol and water in the proportion of 3 volumes of the former to one of the latter. Moisten the drug with 16 fluidounces of this mixture to which the acetic acid has previously been added, and let it digest in a covered vessel in a warm place for 48 hours. Then pack in a cylindrical glass percolator, and gradually pour menstruum upon it until the drug is practically exhausted, allowing percolation to take place slowly. Reserve the first $14\frac{1}{2}$ fluidounces of percolate, distil off

the alcohol from the remainder by means of a water bath and evaporate the residue at a temperature not above 50 deg. C. to soft extract; dissolve this in the reserved portion, and mix thoroughly. The product is to be assayed and made to contain 1 gram of strychnine in 100 cc.; if it contains more, enough menstruum should be added to it to reduce it to this standard.—U. S. P.

II. Brit. Pharm. formula for liquid extract of nux vomica:

Nux vomica, No. 20 powderav.oz. 16
Alcohol, water, each.....sufficient

Moisten the drug with 8 fluidounces of a mixture of 3 volumes of alcohol and 1 of water, set aside in a covered vessel for 6 hours, pack firmly in a percolator, and proceed further as in making a fluid extract or tincture, using the above menstruum. Reserve the first 11½ fluidounces of percolate, and continue percolation until 58 fluidounces more of percolate have been obtained. Express the marc and add the expressed liquid to the weak percolate. Recover the alcohol from this latter liquid by distillation, evaporate the residue to 1 fluidounce, add to this 3 fluidounces of alcohol, add this mixture to the reserved percolate, set aside for 24 hours, pour off the clear liquid, and filter the remainder. Determine the amount of strychnine in this filtrate, and to it add enough of a mixture of 3 volumes of alcohol and 1 of water so that every 100 cc. of product will contain 1.5 grams of strychnine, or every 110 minims 1½ grains.

Extract of Opium. (Aqueous Extract of Opium.)

I.

Opium, powderav.oz. 4
Sugar of milk, recently dried and in fine powder,
Water, eachsufficient

Rub the opium in a mortar to a smooth paste with 9½ fluidounces of water, transfer to a bottle of the capacity of 40 fluidounces, wash the mortar with 28½ fluidounces of water, in suc-

cessive portions, and add the washings to the contents of the bottle. Cork the bottle and shake it vigorously once every 2 hours during 12 hours. Then filter through a rapidly-acting double filter and pour water slowly on the magma, until the filtrate passes nearly colorless and only faintly bitter. Evaporate the filtrate and washings in a tared dish, on a water bath, until the contents weigh about 8 av. ounces, and allow the extract to become cold. Then assay it for morphine, and also determine the proportion of moisture present by drying a small amount, in a flat-bottomed dish, at 100 deg. C., until it ceases to lose weight. Then add enough well-dried sugar of milk so as to bring the quantity of morphine in the final dry extract to 20 per cent., evaporate the whole to dryness, reduce it to powder, and transfer it to small, well-stoppered vials.—

II.

Opium, slicedav.oz. 4
Distilled waterfl.oz. 30

Macerate the opium with one-third of the water for 24 hours, express, macerate the residue with another third of the water for 24 hours, again express, macerate the residue with the remainder of the water for 24 hours, again express, mix the three liquids, strain through flannel, and evaporate to 2 av. ounces.

This extract should yield upon assay 20 per cent. of anhydrous morphine; if containing more, it should be diluted with sufficient milk sugar.—Brit. Pharm.

III.

Opium, moderately fine powderav.oz. 4
Waterfl.oz. 30

Macerate the drug with 20 fluidounces of water for 24 hours, agitating occasionally, express, macerate the residue with the remainder of the water for 24 hours, occasionally agitating, again express, mix the two liquids, filter, and evaporate the filtrate to dryness.—Germ. Pharm.

Extract of Opium, Scale.

I This preparation may be made in this manner:

Exhaust opium, cut or broken into small pieces, by repeated digestion with warm water, evaporate the mixed infusions, by the aid of a gentle heat, to tolerably small bulk, allow to cool, agitate thoroughly with 2 or 3 times its volume of ether or purified benzin or gasolin, allow to stand for 24 hours, agitating occasionally, then decant the upper ethereal layer, pass the remaining liquid through filter paper, evaporate the filtrate on a water bath to syrupy consistence, spread or paint on glass or porcelain plates, and place in a warm location so that the extract may form into scales.

II. Dyson's process:

Deodorized tincture of
opiumflo.oz. 16
Acacia, powdergr. 120

Evaporate the tincture to 4 fluid-ounces, remove the vessel from the fire, add the gum and triturate thoroughly, replace the vessel on the fire, and continue evaporation until the liquid is of such a density that it will have a syrupy consistence when cold. Now spread the liquid, while still warm, in thin layers on glass or porcelain plates and set aside to dry.

Extract of Opium, for Smoking.

The process given below is stated by Mr. John Calvert to be the actual method followed by the Chinese of San Francisco, and presumably is the usual process, for preparing opium for smoking purposes.

The apparatus of the Chinaman consists of two charcoal-burning fire-clay furnaces, about 15 inches high and of about the same width, open on three sides; some palm leaf or other cheap fans for fanning himself and the fire; several brass pans; a brass ladle and several tin ones; a large spoon for skimming; a gridiron, two pair of pincers for lifting the pans, and some thick

wooden cloth to protect the hands, some fiber brushes, several buckets, basket strainers, muslin for straining, fibrous material for drawing off the liquor, some heavy sticks to be used as pestles, several spatulas, about a foot long and 3 inches wide at lower end, and made of oak or ash, and a steel-bladed scraper. One or two low stools complete the arrangements. The operator does not require any tables or benches, as all the work is done on or near the ground. The operation requires two days, but after the first day, the two days' work goes on regularly, and a batch of extract is turned out by the same workman every evening.

The quantity of opium operated upon, so that a workman can do a fair day's work, is usually about 16 or 18 pounds. The balls are placed in tepid water, to soften the surface, and they are washed by hand to remove grit, leaves and other foreign substances. The material is then placed in one of the shallow concave brass pans, which is kept gently heated over the naked charcoal fire, and by means of the wooden pestle, is kneaded into a soft paste. When homogeneous, the softened opium is uniformly spread over the inner surface of the pan, and patted down by the hand, so as to give it a smooth surface. The heat is continued until the greater part of the moisture has evaporated, and the opium has become so solid that the pan can be turned over. The direct heat of a very small fire is now allowed to act directly on the face of the opium by turning the pan upside down. This has to be carefully and skillfully done. As soon as the surface of the material has become sufficiently hardened, it is deftly removed in thin layers, and this is continued until all the opium has been taken from the pan, except the dried portion which remains attached to the bottom and sides of the vessel. This is scraped off. The crusts which were laid aside in the former operation are now put on the gridiron, a few at a

time, with the greatest care, to avoid breaking them, and are toasted over the charcoal at a low temperature until they have become perfectly crisp. The crusts are then placed in one of the brass pans, covered with warm water, and left standing until the next morning.

On resuming work the infusion is first drawn off into buckets through baskets lined with muslin strainers.

The brass pan is slightly tilted, and by means of a knot of vegetable fibre the liquor is drawn off over the edge of the pan without loss. The roasted opium is drained, and a second quantity of warm water added, with as little breakage of the crusts as possible, and the extraction is finished with a third lot of water. Only the first and second infusions are used for the extract; the washings and weak infusion are employed for the extraction of the next batch. There seems to be no precise rule as to the quantity of water for making the infusion, the crusts are merely covered.

The infusion is then mixed with some egg albumen and a part of it is placed in the largest of the brass pans over the naked charcoal fire, and is heated, skimmed and boiled constantly. The pan is not filled, but room is allowed for frothing, and fresh portions of warm infusion containing albumen are added from time to time as the bulk diminishes. During the boiling there are several matters to be attended to, such as keeping up the fire, or banking it up with ashes if too hot, prevention of boiling over by addition of small quantities of the infusion, or of water, and keeping the sides of the pan free from hardened extract. This is effected by water and the fiber scrubbing brushes. When all the infusion has been added, and the evaporation has proceeded as far as is considered to be necessary, the pan is removed from the fire, and the extract constantly stirred by means of a wooden spatula in a current of air

produced by fanning until cool and uniformly mixed.

The yield of extract varies according to the kind and quality of opium. Eighteen pounds of first quality opium generally yield about ten pounds of this extract.

The greatest watchfulness is exercised over the roasting or toasting part of the process. Although a small exposed corner of the crusts may become charred occasionally, the object of this operation is to expose the opium to such a heat only as to render it porous, to do away with the quality of stickiness, which is said by some authors to be produced by an easily decomposed caoutchouc-like substance, and to allow the aqueous extractive matter to ooze out of the material without stirring.

Extract of Opium, Liquid.

Extract of opium of the

Brit. Pharm.	gr. 256
Distilled water	fl.oz. 12
Alcohol	fl.oz. 3

Macerate the extract in water for an hour, stirring frequently, then add the alcohol, set aside for 24 hours, in a cool place, and filter.—Brit. Pharm.

If the U. S. P. extract be employed 284 gr. of it will be required.

Extract, Fluid, of Opium, Camphorated. (Concentrated Paraegoric.)

Opium, fine powder.....	gr. 240
Benzoic acid	gr. 240
Camphor	gr. 240
Oil of anise.....	fl.dr. 4
Alcohol	fl.oz. 12
Water	fl.oz. 3

Dissolve the camphor, oil and acid in the alcohol, triturate the opium to a smooth paste with the water, mix the two liquids, macerate for 7 days, agitating frequently, and filter.

This is similar to the "convenience" preparations put up by manufacturers which may be used for making paregoric, being 8 times stronger than the latter. To make the latter mix 2 fluidounces of the concentrated preparation with 1 fluidounce of glycerin and 13 fluidounces of diluted alcohol.

Extract, Fluid, of Opium, Deodorized or Deodorized Aqueous.

The article sold under this title is the deodorized tincture of opium of the U. S. P.

Extract, Fluid, of Orange Peel. (Bitter.)

Prepare according to the general process (see Extracts, Fluid), using the drug in No. 40 powder, moistening $16\frac{3}{4}$ av. ounces of drug with $5\frac{1}{2}$ fluidounces of menstruum, packing in a conical percolator, reserving the first $12\frac{3}{4}$ fluidounces of percolate and evaporating the remainder at not above 50 deg. C. The menstruum is a mixture of 2 volumes of alcohol and 1 of water.—U. S. P.

Extract, Fluid, of Pareira.

I. Prepare according to the general process (see Extracts, Fluid), but using the drug in No. 40 powder, reserving the first $13\frac{1}{2}$ fluidounces of percolate received from $16\frac{3}{4}$ av. ounces of drug, and evaporating the remainder on a water bath. The menstruum for $16\frac{3}{4}$ av. ounces of drug is a mixture of 13 fluidrams of glycerin, $9\frac{1}{2}$ fluidounces of alcohol, and $4\frac{3}{4}$ fluidounces of water, to be followed by a mixture of 2 volumes of alcohol and 1 of water.—U. S. P.

II. Brit. Pharm. formula for liquid extract of pareira:

Add to the drug, in No. 40 powder, rather more than equal weight of boiling distilled water, macerate for 24 hours, pack in a percolator, and pass through the drug boiling distilled water until the percolate amounts to about 10 times the weight of the drug used, or until the latter is exhausted. Ascertain the proportion of extractive matter in the percolate by evaporating a small portion on a water bath to a firm extract. Then evaporate the total percolate until it contains $\frac{1}{3}$ of its weight of such extractive matter. To this liquid add $\frac{1}{3}$ of its volume of alcohol.

Filter, or otherwise clarify, if necessary.

Extract, Fluid, of Parsley Root.

Prepare according to Process A (see Extracts, Fluid), using the drug in No. 40 powder, and diluted alcohol as the menstruum.—N. F.

Extract, Fluid, of Pink Root.

Prepare according to the general process (see Extracts, Fluid), but moistening $16\frac{3}{4}$ av. ounces of drug with 5 fluidounces of menstruum, reserving the first $13\frac{1}{2}$ fluidounces of percolate, and evaporating the remainder on a water bath. The menstruum is diluted alcohol.—U. S. P.

Extract, Fluid, of Pinkroot, Comp'd. (Fluid Extract of Entozoic Powder.)

Pink root	av.oz. 3
Swamp milkweed	av.oz. 3
Mandrake	av.oz. 3
Dogsbane	av.oz. 3
Balmomy	av.oz. $5\frac{1}{2}$
Alcohol, water, each.....	sufficient

Mix the drugs, reduce to moderately fine powder, and exhaust by the usual process for fluid extracts (see Extracts, Fluid), using a mixture 3 volumes of alcohol and 1 of water as the menstruum, and making 16 fluidounces of product.—Eclectic.

Extract, Fluid, of Pink Root and Senna.

Fluid extract of pink root.....	fl.oz. 10
Fluid extract of senna.....	fl.oz. 6
Oil of anise.....	m. 20
Oil of caraway.....	m. 20

Mix the fluid extracts and dissolve the oils in the mixture.—U. S. P. 1870.

In the U. S. P. 1860 formula, 240 grains potassium carbonate was added to the above mixture. Many manufacturing firms make this preparation with the alkaline admixture, sometimes however adding but 120 grains.

Extract, Fluid, of Pinus Canadensis.

See Extract, Fluid, of Hemlock Spruce.

Extract, Fluid, of Pipsissewa. (Fluid Extract of Chimaphila or Prince's Pine.)

Prepare according to the general process (see Extracts, Fluid), but using the drug in No. 30 powder, receiving the first 11½ fluidounces (from 16¾ av. ounces of drug) as reserve percolate, and evaporating the remainder on a water bath. The menstruum is diluted alcohol.—U. S. P.

Extract, Fluid, of Pleurisy Root. (Fluid Extract of Asclepias or Asclepias Tuberosa.)

Prepare according to the general process (see Extracts, Fluid). The menstruum is diluted alcohol.—N. F. Appendix and U. S. P. 1890.

Extract, Fluid, of Poke Root.

Prepare according to the general formula (see Extracts, Fluid), reserving the first 13 fluidounces of percolate from 16¾ av. ounces of drug. The menstruum is diluted alcohol.—U. S. P. and N. F. (1st Ed.).

Extract, Fluid, of Pomegranate.

Prepare according to the general process (see Extracts, Fluid), but moistening 16¾ av. ounces of drug, in No. 30 powder, with 6½ fluidounces of menstruum, and reserving the first 13 fluidounces. The menstruum is a mixture of 13 fluidrams of glycerin with 14½ fluidounces of diluted alcohol, to be followed by diluted alcohol.—U. S. P.

Extracts, Powdered.

Most extracts now appear on the market, not only in the old-style plastic or pilular form, but also in the form of powder. Inasmuch as almost all plant extracts are injured by the application of heat, the powdered extracts do not very well represent the drug, less so in fact than almost any preparation made from a crude drug. However, there is a demand for these powdered extracts, and this demand will be supplied. Extracts like those of opium and kino can be evaporated to dryness without any appreciable injury to the

principles present, but others again, like hyoscyamus, valerian, etc., are very susceptible to change, either because of the presence of easily decomposable principles or because of the presence of volatile matter. These latter extracts should never be prepared in the powdered form. However, practically all extracts now appear in the market in the powder form, irrespective of the appropriateness, suitability or value of this form.

In making powdered extracts of drugs containing volatile or easily decomposable principles, the temperature employed in drying should be quite low, say not to exceed 55 deg. C. The drying of the extract may be facilitated by spreading out in a thin layer and warming in a drying room or closet at the specified temperature, driving a current of warm, dry air through the chamber if this be convenient. Even then it may not be advisable or possible to reduce the extract to such dryness that it can be powdered, and then it becomes necessary to add a small amount of some substance, such as milk sugar or some of the powder of the drug itself. If the drug contains considerable fixed oil, the extract cannot be dried thoroughly and the intervention of such a powder is necessary. It is also to be remembered in this connection that in making powdered extracts, glycerin must not enter into the menstruum employed in the extraction of the drug, as this will prevent the extract from drying.

After an extract has been reduced to dryness, either with or without the intervention of the added powder, it should be reduced to fine powder and then be preserved in well-stoppered, wide-mouthed bottles.

Extract, Fluid, of Prickly Ash Bark. (Fluid Extract of Xanthoxylum.)

Prepare according to the general formula (see Extracts, Fluid), but using the drug in No. 40 powder, moistening 16¾ av. ounces of it with 4 fluidounces

of menstruum, reserving the first $14\frac{1}{2}$ fluidounces of percolate, and evaporating the remainder on a water bath. The menstruum is a mixture of 3 volumes of alcohol and 1 of water.—U. S. P.

Extract, Fluid, of Pumpkin Seed.

Prepare by the usual process of making fluid extracts (see Extracts, Fluid), bruising the seed with an equal weight of well-washed and dried sand until thoroughly comminuted, and using a mixture of 1 volume of water and 15 of alcohol as the menstruum.

Extract of Quassia.

Quassia, No. 20 powder...av.oz. 16
Sugar of milk, recently dried and in fine powder,
Water, eachsufficient

Moisten the powder with $6\frac{1}{2}$ fluidounces of water, pack it firmly in a conical percolator, and gradually pour water upon the drug until the percolate has but a slight bitter taste. Reduce the liquid to about $\frac{3}{4}$ of its bulk by boiling, strain, then evaporate on a water bath to dryness, and add enough sugar of milk to make the extract weigh 4 av. ounces. Mix thoroughly, reduce to fine powder, and transfer to well-stoppered bottles.—U. S. P.

Extract, Fluid, of Quassia.

Prepare according to the general process (see Extracts, Fluid), reserving the first $14\frac{1}{2}$ fluidounces of percolate from $16\frac{3}{4}$ av. ounces of drug, and evaporating the remainder on a water bath. The menstruum is a mixture of 1 volume of alcohol with 2 of water.—U. S. P.

Extract of Quebracho.

Exhaust fine powdered quebracho by any suitable process, using as a menstruum a mixture of 4 volumes of alcohol and 5 of water, then evaporate the tincture on a water bath either to thick extract or to dryness as may be desired.

The yield of thick extract is about 11 per cent., of dry extract 9 to 10 per cent.—D. modified.

Extract, Fluid, of Quebracho. (Fluid Extract of Aspidosperma.)

Prepare according to the general process (see Extracts, Fluid). The first menstruum for $16\frac{3}{4}$ av. ounces of drug is a mixture of 13 fluidrams of glycerin, $9\frac{1}{2}$ fluidounces of alcohol and $4\frac{3}{4}$ fluidounces of water, to be followed by a mixture of 2 volumes of alcohol and 1 of water.—N. F. Appendix and U. S. P. 1890.

Extract, Fluid, of Quinine Flower. (Fluid Extract of Sabbatia Eliottii.)

Extract the entire plant in moderately fine powder by any suitable process for fluid extracts, using diluted alcohol as the menstruum.

Extract, Liquid, of Red Gum. (Liquid Extract of Eucalyptus Gum or Eucalyptus Rostrata.)

Red gumav.oz. 4
Alcoholfl.dr. 13
Distilled water, to make.....oz. 16
makefl.oz. 16

Dissolve the gum in $10\frac{1}{2}$ fluidounces of the water, strain, and add the alcohol and enough distilled water to make 16 fluidounces.—Brit. Form.

Extract of Rhatany. (Extract of Krameria.)

Krameria, No. 40 powder.av.oz. 16
Watersufficient

Moisten the powder with $4\frac{1}{2}$ fluidounces of water, pack in a conical glass percolator, and gradually pour water upon the drug until the percolate is but slightly astringent. Heat the percolate to boiling, strain, and evaporate the colature on a water bath, at a temperature not over 70 degrees C., to dryness.—U. S. P.

The Brit. Pharm. is made in practically the same manner, but no temperature of evaporation is mentioned.

Extract, Fluid, of Rhatany. (Fluid Extract of Krameria.)

Prepare according to the general process (see Extracts, Fluid), but using the drug in No. 40 powder, reserving the first 13 fluidounces of percolate, from

16¾ av. ounces of drug, and evaporating the remainder on a water bath. The menstruum is diluted alcohol.—U. S. P.

Extract of Rhubarb.

I. Evaporate the fluid extract in a porcelain dish, by means of a water bath, with constant stirring, at a temperature not exceeding 50 deg. C., to pilular consistence.—U. S. P.

II. Exhaust in the usual manner for extracts (see Extracts), percolating slowly with a mixture 7 volumes of alcohol and 4 of water. Evaporate the percolate to dryness.—Brit. Pharm.

III.

Rhubarb, cut coarse.....av.oz. 8
Alcohol, water, each.....sufficient

Macerate the drug with a mixture of 18½ fluidounces of alcohol and 23 of water for 24 hours at a temperature of 15 to 20 deg. C., agitating occasionally, express, macerate the residue in the same manner with a mixture of 9¼ fluidounces of alcohol and 11½ of water, again express, mix the two liquids, let stand for 2 days, filter, and evaporate the filtrate to dryness.

Extract, Fluid, of Rhubarb.

Prepare according to the general process (see Extracts, Fluid), but using the drug in No. 30 powder, packing in a conical percolator, reserving the first 12 fluidounces of percolate, from 16¾ av. ounces of drug, and evaporating the remainder at a temperature not over 70 degrees C. The menstruum is a mixture of 4 volumes of alcohol and 1 of water.—U. S. P.

Extract, Fluid, of Rhubarb, Aromatic.

Rhubarbav.oz. 10
Cinnamonav.oz. 2
Cloveav.oz. 2
Nutmegav.oz. 1
Diluted alcoholsufficient

Reduce the drugs to moderately coarse powder and extract by the usual method of percolation, so as to make 16 fluidounces of product, using diluted alcohol as a menstruum.

If 1 fluidounce of this be mixed with 15 fluidounces of syrup, the product is practically identical with the aromatic syrup of rhubarb of the U. S. P. The above is 3 times the strength of the U. S. P. aromatic tincture of rhubarb.—N. F. (1st edition) modified.

The quantity of drug mentioned in the formula of the 1st N. F. (it is not mentioned in the revised N. F.) was 20 av. ounces. This has been reduced in the above to 15 ounces.

Extract of Rhubarb, Compound.

Extract of rhubarb.....av.oz. 3
Extract of aloesav.oz. 1
Resin of jalap.....av.oz. ½
Soap, powderav.oz. 2

All of the above, if not in fine powder, should be reduced to this condition and then should be well mixed. Before using at all they should be thoroughly dried.—Germ. Pharm.

Extract, Fluid, of Rhubarb and Potassium, Comp'd. (Fluid Neutralizing Extract.)

Rhubarbav.oz. 8½
Cassia cinnamonav.oz. 4¼
Golden sealav.oz. 4¼
Potassium carbonategr. 480
Oil of peppermint.....m. 30
Diluted alcoholsufficient

Mix the rhubarb, cinnamon and golden seal, reduce to moderately fine powder, and exhaust by the usual process for fluid extracts (see Extracts, Fluid), making 15½ fluidounces of product. In the latter dissolve the oil and alkali.

Extract, Fluid, of Rhubarb and Senna.

See Extract, Fluid, of Senna and Rhubarb.

Extract, Fluid, of Rhus Aromatica. (Fluid Extract of Sweet Sumach.)

Extract the bark of the root in fine powder by any suitable process for fluid extracts, using alcohol as the menstruum.

Extract, Fluid, of Rhus Glabra. (Fluid Extract of Sumach.)

Prepare according to the general process (see Extracts, Fluid), but using the drug in No. 40 powder, moistening 16¾

av. ounces of it with $5\frac{1}{2}$ fluidounces of menstruum, reserving the first 13 fluidounces of percolate, and evaporating the remainder on a water bath. The menstruum is a mixture of 13 fluidrams of glycerin with $14\frac{1}{2}$ fluidounces of diluted alcohol, to be followed by diluted alcohol.—U. S. P.

Extract of Rose, Inspissated.

Red rose petals, cut moderately coarseav.oz. 8
Alcohol, water, glycerin,
eachsufficient

Mix $31\frac{1}{2}$ fluidounces of alcohol and $10\frac{1}{2}$ of water, pour this mixture on the rose leaves, allow it to stand for 24 hours, express and evaporate the resulting fluid to a weight of 4 av. ounces. Allow the evaporated extract to stand for 24 hours in a cool place, filter and evaporate the filtrate to a syrupy consistence. Then add sufficient glycerin to bring the whole up to 2 av. ounces.

Of this extract, which is clearly soluble, 4 fluidrams is sufficient to make 16 fluidounces of honey of rose.—D.

According to the U. S. P., honey of rose should be made from fluid extract of rose, which see. The above is, however, excellent for making this preparation.

Extract, Fluid, of Rose.

Prepare according to the general process (see Extracts, Fluid), using the drug (red rose petals) in No. 20 powder, moistening $16\frac{3}{4}$ fluidounces of it with $6\frac{1}{2}$ fluidounces of menstruum, reserving the first 12 fluidounces of percolate and evaporating the remainder at not above 50 deg. C. The menstruum is a mixture of 13 fluidrams of glycerin with $14\frac{1}{2}$ fluidounces of diluted alcohol, to be followed by diluted alcohol.—U. S. P.

Extract, Fluid, of Rue Anemone.
(Fluid Extract of *Thalictrum Anemonoides*.)

Extract the entire plant in moderately fine powder by any suitable process for fluid extracts, using diluted alcohol as the menstruum.

Extracts, Saccharated.

These are a class of powdered extracts which represent the drug, weight for weight. They are prepared by exhausting the powdered drug with a suitable menstruum, evaporating the tincture to thick extract, adding some sugar of milk, continuing the evaporation to dryness, powdering and adding enough milk sugar to make up the weight of the original drug.

With one exception, these extracts are seldom or never prescribed or used, the exception being saccharated extract of coto, which see.

Extract of Sarsaparilla.

Exhaust this drug in fine powder by the process of percolation or any other suitable process, using as menstruum a mixture of 6 volumes of alcohol and 5 of water; evaporate the tincture on a water bath to thick extract.—D. modified.

The yield is about 20 per cent.

Extract, Fluid of Sarsaparilla.

I.

Prepare according to the general process (see Extracts, Fluid), but using the drug in No. 30 powder, reserving the first 13 fluidounces of percolate, from $16\frac{3}{4}$ av.ounces of drug, and evaporating the remainder on a water bath. The menstruum is a mixture of 1 volume of alcohol with 2 of water.—U. S. P.

II. Brit. Pharm. formula for liquid extract of sarsaparilla (extractum sarsæ fluidum):

Sarsaparilla, No. 40 powderav.oz. $16\frac{3}{4}$
Glycerinfl.dr. 13
Alcohol, water, each.....sufficient

Divide the drug into three portions and extract by repercolation, obtaining enough final percolate so that when added to the glycerin it will make a total of 16 fluidounces. The menstruum is a mixture of 2 volumes of alcohol and 7 of water.

Extract, Fluid, of Sarsaparilla, Compound.

I.

Sarsaparilla	av.oz.	12½
Licorice root	av.oz.	2
Sassafras	av.oz.	1¾
Mezereum	av.oz.	½
Glycerin	fl.dr.	13
Alcohol, water	sufficient	

Mix the drugs, reduce to No. 30 powder, and prepare 16 fluidounces of fluid extract according to the general process (see Extracts, Fluid), reserving the first 13 fluidounces of percolate, and evaporating the remainder on a water bath. The menstruum is a mixture of 13 fluidrams of glycerin with 14½ fluidounces of diluted alcohol, to be followed by diluted alcohol.—U. S. P.

II. A so-called "compound fluid extract of sarsaparilla for syrup" is made by manufacturers which may be duplicated according to the following formula:

Fluid extract of sarsaparilla..	fl.oz.	13
Fluid extract of licorice....	fl.oz.	1
Fluid extract of senna,		
aqueous	fl.oz.	1
Oil of sassafras	drops	5
Oil of anise	drops	5
Oil of wintergreen.....	drops	5
Water, to make.....	fl.oz.	16

Add the oils to the fluid extract of sarsaparilla, shake well, incorporate the other ingredients, shake again, let stand for 24 hours, and filter.

This preparation is to be mixed with 3 times its volume of simple syrup to make compound syrup of sarsaparilla.

This preparation may be made from the drugs as in No. III.

III.

Sarsaparilla	av.oz.	14½
Licorice	gr.	480
Senna	gr.	480
Oil of sassafras.....	drops	5
Oil of anise	drops	5
Oil of wintergreen.....	drops	5
Alcohol, water, each.....	sufficient	

Mix the drugs, reduce them to moderately fine powder and extract by percolation or any suitable process to obtain 16 fluidounces of product, using as

a menstruum a mixture of 1 part of alcohol to 2 of water by measure. To the product obtained add the volatile oils and shake well.

Extract, Fluid, of Savine.

Prepare according to the general process (see Extracts, Fluid), but using the drug in No. 40 powder, moistening 16¾ av.ounces of it with 4 fluidounces of menstruum, reserving the first 14½ fluidounces of percolate, and evaporating the remainder at not above 50 deg. C. The menstruum is alcohol.—U. S. P.

Extract of Scopola.

Evaporate the fluid extract in a porcelain dish, on a water bath, at a temperature not above 50 deg. C., with constant stirring, to pilular consistence. The product is assayed and is made to contain 2 per cent. of mydriatic alkaloids. If found to contain more than this percentage, enough powdered sugar of milk should be added to reduce it to this standard.—U. S. P.

Extract, Fluid, of Scopola.

Prepare according to the general process (see Extracts, Fluid), using the drug in No. 40 powder, moistening 16¾ fluidounces of drug with 5½ fluidounces of menstruum, reserving the first 13 fluidounces of percolate and evaporating the remainder at not above 50 deg. C. The product is to be assayed and made to contain ½ gram of mydriatic alkaloids in 100 cc.; if it contains more than this proportion, enough of the menstruum should be added to it to reduce it to this standard. The menstruum is a mixture of 4 volumes of alcohol with 1 of water.—U. S. P.

Extract, Fluid, of Scullcap.

Prepare according to the general process (see Extracts, Fluid), but using the drug in No. 40 powder, moistening 16¾ av.ounces of it with 5½ fluidounces of menstruum, and reserving the first 13 fluidounces of percolate. The menstruum is diluted alcohol.—U. S. P.

Extract, Fluid, of Senega.

Prepare according to the general proc-

ess (see Extracts, Fluid), but using drug in No. 40 powder, moistening $16\frac{3}{4}$ av.ounces of it with 7 fluidounces of menstruum, reserving the first $13\frac{1}{2}$ fluidounces of percolate, and evaporating the remainder on a water bath. The menstruum is a mixture of 4 fluidounces of solution of potassium hydrate, $9\frac{1}{2}$ fluidounces of alcohol and $4\frac{3}{4}$ fluidounces of water, to be followed by a mixture of 2 volumes of alcohol and 1 of water.—U. S. P.

Extract, Fluid, of Senna.

I. The preparation of the U. S. P. is what is called "deodorized fluid extract of senna" and is made as follows:

Moisten $16\frac{3}{4}$ av.ounces of drug, in No. 40 powder, with $5\frac{1}{2}$ fluidounces of alcohol, pack in a cylindrical percolator, and percolate with alcohol until practically exhausted. This alcoholic percolate is to be rejected. Remove the drug from the percolator, dry it, moisten it with $6\frac{1}{2}$ fluidounces of diluted alcohol, then extract in the usual manner for fluid extracts (see Extracts, Fluid), using diluted alcohol as the menstruum. Reserve the first 13 fluidounces of percolate, evaporate the remainder at not above 50 deg. C. to soft extract, dissolve this in the reserved portion, and add enough diluted alcohol to make 16 fluidounces of product.

The alcohol extracts the griping principles of senna without materially interfering with the laxative principles which latter are subsequently extracted by means of the diluted alcohol.

II.

The preparations sold commercially under the name aqueous fluid extract of senna are usually made by infusing cut senna leaves with enough hot water to just cover them, allowing to macerate for an hour or two, straining and expressing the liquid, infusing the residue again as before, straining and expressing the liquid again in the course of an hour or two, and mixing the two liquids. This liquid usually measures more than

a finished fluid extract should measure, and inasmuch as it is not practicable to evaporate this infusion, the fluid extract of the market is prepared from the latter by adding enough alcohol to preserve it, allowing to stand for 24 hours, and filtering the liquid from the precipitated mucilage. The product is, of course, not properly a fluid extract.

Extract, Fluid, of Senna Pods.

(Liquid Extract of Senna Pods.)

Senna pods, bruised.....av.oz. $16\frac{3}{4}$
Alcohol, water, each.....sufficient

Mix 6 fluidounces of alcohol with 12 fluidounces of water, with this evenly moisten the drug, pack tightly in a closed vessel, macerate for 3 days, express forcibly, and reserve the product (about 9 fluidounces). Break up the marc, add to it enough of the same menstruum (about 7 fluidounces) to make 16 fluidounces, macerate for 24 hours, again express, mix this liquid with the reserved portion, heat the whole liquid in a closed vessel on a water bath to 94 deg. C. and maintain at this temperature for 10 minutes, allow to cool, if necessary add enough of a mixture of 1 volume of alcohol and 2 of water to make 16 fluidounces, and finally filter.—Brit. Form.

Extract, Fluid, of Senna, Aromatic (Fluid Senna.)

Senna, No. 40 powder.....av.oz. $16\frac{3}{4}$
Sugarav.oz. $8\frac{1}{4}$
Oil of coriander.....drops 12
Alcoholsufficient
Diluted alcohol, to make...fl.oz. 16

Moisten the senna with alcohol and extract by percolation with this liquid until the drug is exhausted. Reject the percolate, recover the alcohol from it by distillation, remove the drug from the percolator, dry it, then prepare a fluid extract from it in the usual manner using diluted alcohol as a menstruum. Dissolve $5\frac{3}{4}$ av.ounces of sugar in the reserve percolate by heat over a water bath, and evaporate to about $11\frac{1}{2}$ fluidounces. Dissolve the remainder of the sugar in the weak percolate and evaporate this on a water

bath so that when mixed with the reserved portion, it will measure 16 fluid-ounces. Lastly add the oil and dissolve by agitation.—Cinc. Acad. Pharm.

This preparation is of the nature of a concentrated syrup, similar to syrup of senna, U. S. P., which see.

Extract, Fluid, of Senna, Compound.

Senna	av.oz.	7 $\frac{3}{4}$
Jalap	av.oz.	7 $\frac{3}{4}$
Coriander	av.oz.	2 $\frac{1}{4}$
Alcohol, water, each.....	sufficient	

Reduce the drugs to fine powder and exhaust by percolation or any other suitable process for fluid extracts, using as a menstruum a mixture of 2 volumes of alcohol and 1 of water. The product should measure 16 fluidounces.

Extract, Fluid, of Senna and Jalap. (Fluid Extract of Antibilious Physic.)

I.

Senna, coarse powder....	av.oz.	17 $\frac{1}{2}$
Jalap, coarse powder....	av.oz.	8 $\frac{3}{4}$
Potassium carbonate	gr.	360
Sugar	av.oz.	8 $\frac{3}{4}$
Oil of clove.....	m.	40
Oil of anise	m.	20
Alcohol, diluted alcohol, each	sufficient	

Mix the senna and jalap, moisten with alcohol, macerate for 24 hours, then pack in a percolator, and gradually add alcohol through the percolator until 16 fluidounces of percolate have been obtained, returning the first portions of percolate until it comes through clear. Then add diluted alcohol to the drug in percolator until the drug is exhausted. Evaporate the latter liquid to 4 fluidounces, add the sugar, potassium carbonate and oils, the latter previously dissolved in a small amount of alcohol, also the reserved percolate, and make 24 fluidounces of mixture.—Eclectic.

II. A fluid extract of senna and jalap is also prepared as follows:

Senna	av.oz.	8 $\frac{3}{4}$
Jalap	av.oz.	8 $\frac{3}{4}$
Alcohol, water, each.....	sufficient	

Mix the drugs, reduce to fine powder, and exhaust by percolation or any other suitable process for fluid extracts, using

as a menstruum a mixture of 2 volumes of alcohol and 1 of water. The product should measure 16 fluidounces.

Extract, Fluid, of Senna and Rhubarb.

Senna, coarse powder....	av.oz.	12 $\frac{3}{4}$
Rhubarb, coarse powder..	av.oz.	4 $\frac{1}{4}$
Potassium bicarbonate	gr.	230
Tincture of ginger.....	fl.oz.	1
Oil of clove	drops	10
Oil of anise	drops	20
Alcohol, water, each, to make	fl.oz.	16

Extract the senna and rhubarb by slow percolation with diluted alcohol so as to obtain 12 fluidounces of percolate. Then continue percolation with a mixture of 1 volume alcohol and 3 of water until the drugs are fairly exhausted. Evaporate this weak percolate on a water bath to 4 fluidounces, in this dissolve the potassium bicarbonate, add this to the previous percolate, and then add the tincture of ginger in which the oils have previously been dissolved.—Eclectic modified.

The commercial preparations usually contain potassium carbonate instead of the bicarbonate. Some of them contain simply 8 ounces each of rhubarb and senna to the pint.

Extract, Fluid, of Serpentaria. (Fluid Extract of Virginia Snake Root.)

Prepare according to the general process (see Extracts, Fluid), but moistening 16 $\frac{3}{4}$ av.ounces of drug with 5 fluidounces of menstruum, reserving the first 14 $\frac{1}{2}$ fluidounces of percolate, and evaporating the remainder at not above 50 deg. C. The menstruum is a mixture of 4 volumes of alcohol and 1 of water.—U. S. P.

Extract, Fluid, of Soap Bark. (Fluid Extract of Quillaja.)

Prepare according to the general process (see Extracts, Fluid), but moistening 16 $\frac{3}{4}$ av.ounces of drug with 6 $\frac{1}{2}$ fluidounces of menstruum (diluted alcohol) and reserving the first 13 fluidounces of percolate.—U. S. P.

Extract, Fluid, of Spikenard. (Fluid Extract of American Spikenard.)

From the root of *Aralia racemosa*.

Prepare according to Process A (see Extracts, Fluid), using the drug in No. 60 powder, and a mixture of 2 volumes of alcohol and 1 of water as the menstruum.—N. F.

Extract of Squill.

Squillav.oz. 8

Diluted alcoholfl.oz. 34

Macerate for 6 days, express, set the liquid aside for several days, filter, and evaporate to a thick extract.—Germ. Pharm. (2nd).

Extract, Fluid, of Squill.

Extract the drug in No. 20 powder by percolation in the usual manner for fluid extracts, moistening $16\frac{3}{4}$ av.ounces with 13 fluidounces of menstruum, packing in a conical glass percolator, and macerating and percolating with menstruum until 16 fluidounces of percolate are obtained, which is the product. The menstruum is a mixture of 11 volumes of 36 p. c. acetic acid and 29 of water.—U. S. P.

The preparation of the U. S. P. 1890 was made with a mixture of 3 volumes of alcohol and 1 of water.

Extract, Fluid, of Squill, Acetic.

The commercial so-called acetic fluid extracts of squill represent but 33 to 40 per cent. of drug. A preparation of about the same character may be made as follows:

Squill, No. 30 powder.....av.oz. 4

Alcoholfl.oz. 4

Diluted acetic acid.....sufficient

Macerate the drug for 4 days with 16 fluidounces of the acid, then express strongly, macerate the residue for 2 days with 12 fluidounces of the acid, express again, mix the two liquids, evaporate the mixture on a water bath to 8 fluidounces, allow to cool, add the alcohol, mix well, let stand 24 hours, and filter.

The syrup of squill may be made from this by mixing 1 fluidounce with 7 fluidounces of simple syrup.

For a full-strength acetic fluid extract

of squill see Extract, Fluid, of Squill, U. S. P. formula.

Extract, Fluid, of Squill and Senega. (Comp. Fluid Extract of Squill.)

Squill, No. 20 powder.....av.oz. $8\frac{1}{4}$

Senega, No. 20 powder.....av.oz. $8\frac{1}{4}$

Ammonia water, 10 p. c.....f.l.d.r. 4

Alcohol, water, each.....sufficient

Exhaust in the usual manner for fluid extracts (see Extracts, Fluid), adding the ammonia water to the liquid before adding the final volume of menstruum. The menstruum is a mixture of 3 volumes of alcohol and 1 of water.

This is used for making hive syrup. 14 grains of tartaremetic is to be dissolved in 4 fluidrams of hot water, $2\frac{1}{2}$ fluidounces of the fluid extract added and then enough simple syrup to make 16 fluidounces.

Extract, Fluid, of Stavesacre. (Fluid Extract of Staphisagria.)

Prepare according to the general process (see Extracts, Fluid), but moistening $16\frac{3}{4}$ av.ounces of drug with 5 fluidounces of menstruum, reserving the first 13 fluidounces of percolate, and evaporating the remainder at not above 50 deg. C. The menstruum is a mixture of 4 volumes of alcohol and 1 of water.—U. S. P.

Extract, Fluid, of Stillingia. (Fluid Extract of Queen's Root.)

Prepare according to the general formula (see Extracts, Fluid), but using the drug in No. 40 powder, moistening $16\frac{3}{4}$ av.ounces of it with 5 fluidounces of menstruum, reserving the first $13\frac{1}{2}$ fluidounces of percolate, and evaporating the remainder on a water bath. The menstruum is diluted alcohol.—U. S. P.

Extract, Fluid, of Stillingia, Comp.

Stillingiaav.oz. 4

Turkey cornav.oz. 4

Blue flagav.oz. 2

Elder flowersav.oz. 2

Pipsissewaav.oz. 2

Corianderav.oz. 1

Prickly ash berries.....av.oz. 1

Alcohol, water, each.....sufficient

Mix the drugs, reduce them to No. 40 powder, and prepare $15\frac{1}{2}$ fluidounces of

fluid extract by Process B (see Extracts, Fluid), using a mixture of 4 fluidounces each of alcohol and water with 8 of alcohol as the first menstruum and diluted alcohol as the second menstruum.—N. F.

Extract of Stramonium.

Evaporate the fluid extract in a porcelain dish, by means of a water bath, at a temperature not exceeding 50 deg. C., with constant stirring, to pilular consistence. The product is to be assayed and made to contain 1.4 per cent. of mydriatic alkaloids. Should the extract be found to contain more than this amount, enough powdered sugar of milk should be added to reduce it to this standard.—U. S. P.

The extract of stramonium of the U. S. P. 1890 was made from the seed, as is also the extract of the Brit. Pharm. In the latter the drug in No. 40 powder is extracted with a mixture of 1 volume of water and 3 of alcohol, and the liquid is evaporated to the consistence of a firm extract; no temperature of evaporation is specified.

Extract of Stramonium Seed.

Prepare according to the general process (see Extracts), using the drug in No. 60 powder, extracting with diluted alcohol and obtaining an extract of pilular consistence.—N. F. Appendix and U. S. P. 1890.

Extract, Fluid, of Stramonium.

Prepare according to the general process (see Extracts, Fluid), using the drug (leaves) in No. 40 powder, moistening 16¾ av.ounces of it with 6½ fluidounces of menstruum, reserving the first 13 fluidounces of percolate, and evaporating the remainder at not above 50 deg. C. The product is to be assayed and made to contain 0.35 gram of mydriatic alkaloids in 100 cc.; if it contains more, enough menstruum should be added to reduce it to this standard. The menstruum is a mixture of 2 volumes of alcohol and 1 of water.—U. S. P.

The preparation of the U. S. P. 1890 was made from the seed.

Extract, Fluid of Stramonium Seed.

Prepare according to the general process (see Extracts, Fluid), using the drug in No. 60 powder and a mixture of 3 volumes of alcohol and 1 of water as a menstruum.—N. F. Appendix and U. S. P. 1890.

Extract of Strophanthus.

Strophanthus seed, reduced to No. 30 powder, and dried at 43 deg. C. av.oz. 1
Stronger ether, alcohol, milk =
sugar, each sufficient

Pack the dried and powdered drug into a percolator, moisten with the ether, macerate for 24 hours, then allow percolation to proceed, continuing the addition of ether until the percolate appears colorless. Remove the marc from the percolator, then gradually dry it by the application of a temperature of 49 deg. C. Again reduce the drug to powder, repack it in the percolator, moisten with alcohol, macerate for 48 hours, then percolate slowly, adding more alcohol until 9½ fluidounces of liquid are obtained. From this evaporate most of the alcohol, transfer the residue to a tared vessel, concentrate until the liquid begins to thicken, and then add sufficient milk sugar to produce 2 av.ounces of extract, in powder.—Brit. Pharm.

This extract is therefore one-half the strength of the drug.

Extract, Fluid, of Strophanthus.

Tincture of strophanthus is sold sometimes under this name.

Extract of Sumbul. (Extract of Musk Root.)

Evaporate the fluid extract in a porcelain dish, by means of a water bath, at a temperature not exceeding 70 deg. C., with constant stirring, to pilular consistence.—U. S. P.

Extract, Fluid, of Sumbul. (Fluid Extract of Musk Root.)

Prepare according to the general process (see Extracts, Fluid), using the drug in No. 30 powder, moistening 16¾

av.ounces of it with $6\frac{1}{2}$ fluidounces of menstruum, and reserving the first $13\frac{1}{2}$ fluidounces of percolate. The menstruum is a mixture of 3 volumes of alcohol and 1 of water.—U. S. P.

Extract of Tamarind. (Tamarind Pulp.)

Tamarindav.oz. 16
Distilled water, boiling....pints 5
Mix, allow to stand 24 hours, stirring frequently, strain with expression through closely-woven cloth, filter the liquid, and evaporate the liquid to thin extract.

The yield is about 50 per cent.—D.

Extract, Fluid, of Tea. (Fluid Extract of Camellia.)

From the commercial dried leaves of *Camellia Thea* (Tea.).

Prepare according to Process B, using the drug in No. 40 powder, the first menstruum (for $16\frac{3}{4}$ av.ounces of drug) being a mixture of 1 fluidounce of glycerin, 4 of alcohol, and 11 of water, the second a mixture of 1 volume of alcohol with 3 of water.—N. F.

It is recommended that the best quality of commercial black tea, preferably "Formosa Oolong," be employed for this preparation.

Extract of Tobacco.

Rademacher's:

Tobacco leaves, freshly gathered (green), water, each.sufficient

Cut the leaf, contuse in a mortar with sufficient water to make a pasty mass, express, and evaporate the liquid on a water bath to soft extract.

The yield is about 4 per cent.

Extract, Fluid, of Tolu.

Tolu balsamav.oz. $8\frac{3}{4}$
Alcohol, to make.....fl.oz. 16

Digest the balsam in a closed vessel with 10 fluidounces of alcohol on a water bath until dissolved, then strain through flannel, and wash the vessel and strainer with enough alcohol to make up the required amount.

This is not rightly a fluid extract; it is designed for the convenient preparation of the official tincture, which may

be prepared by mixing 3 fluidounces of the "fluid extract" with 12 fluidounces of alcohol.

Extract, Fluid, of Tolu, Soluble.

The preparation which passes under this name may be prepared according to the following process:

Tolu balsamav.oz. $2\frac{1}{2}$
Magnesium carbonategr. 100
Glycerinfl.oz. 6
Water, alcohol, each.....sufficient

Mix 5 fluidounces of the alcohol with the glycerin, add the balsam, and dissolve the latter by the aid of a moderate heat, shaking frequently, and avoiding loss by evaporation. Now add 6 fluidounces of water, allow the mixture to become cold, decant the milky liquid from the resinous precipitate, mix the decantate intimately with the magnesium carbonate in a mortar, filter, and wash mortar and filter with enough of a mixture of 1 volume of alcohol and 2 of water to make the filtrate measure 16 fluidounces.

This is designed for the rapid manufacture of syrup of tolu, which may be made by mixing 1 fluidounce of this "fluid extract" with 15 of simple syrup.

It is to be noted that the N. F. recognizes a soluble tincture of tolu which was intended for the rapid preparation of syrup of tolu; this tincture is, however, not quite 16 times the strength of the syrup, as stated by the N. F.

Extract, Fluid of Turkey Corn. (Fluid Extract of Corydalis.)

Prepare according to Process A (see Extracts, Fluid), but using the drug in No. 60 powder, and using a mixture of 3 volumes of alcohol and 1 of water as the menstruum.—N. F.

Extract, Fluid, of Unicorn Root. (Fluid Extract of Stargrass or Aletris—Liquid Extract of Aletris, Brit. Pharm.)

From the rhizome of *Aletris farinosa*.

Prepare according to Process A (see Extracts, Fluid), using the drug in No. 60 powder, and diluted alcohol as the menstruum.—N. F. and Brit. Form.

Extract of Uva Ursi.

Prepare according to the general process (see Extracts), but using the drug in No. 30 powder. The menstruum is a mixture of 2 volumes of alcohol and 5 of water. The extract is to be of pilular consistence.—U. S. P. 1890.

Extract, Fluid, of Uva Ursi.

Prepare according to the general process (see Extracts, Fluid), but using the drug in No. 30 powder, moistening $16\frac{3}{4}$ av.ounces of drug with $6\frac{1}{2}$ fluidounces of menstruum, reserving the first $14\frac{1}{2}$ fluidounces of percolate, and evaporating the remainder at not above 50 deg. C. The menstruum is a mixture of $4\frac{3}{4}$ fluidounces of glycerin, $3\frac{1}{4}$ of alcohol, and 8 of water, to be followed by a mixture of 2 volumes of alcohol and 5 of water.—U. S. P.

Extract of Valerian.

Exhaust valerian root in fine powder by percolation or any other suitable process, using as a menstruum a mixture of 4 volumes of alcohol and 5 of water. Evaporate the tincture obtained on a water bath to thick extract.

The yield is about 20 per cent.—Germ. Pharm. (1st), modified.

Extract, Fluid, of Valerian.

Prepare according to the general process (see Extracts, Fluid), but moistening $16\frac{3}{4}$ av.ounces of drug with 5 fluidounces of menstruum, reserving the first $13\frac{1}{2}$ fluidounces of percolate, and evaporating the remainder at not above 50 deg. C. The menstruum is a mixture of 3 volumes of alcohol and 1 of water.—U. S. P.

Extract, Fluid, of Veratrum. (Fluid Extract of American or Green Hellebore—Fluid Extract of Veratrum Viride.)

Prepare according to the general process (see Extracts, Fluid), but moistening $16\frac{3}{4}$ av.ounces of drug with 5 fluidounces of menstruum, reserving the first $14\frac{1}{2}$ fluidounces of percolate, and evaporating the remainder at not above 50 deg. C. The menstruum is alcohol.—U. S. P.

Extract, Fluid, of Vervain. (Fluid Extract of Verbena or Blue Vervain.)

From the root of Verbena hastata.

Prepare according to Process A (see Extracts, Fluid), using the drug in No. 40 powder, and diluted alcohol as the menstruum.—N. F.

Extract of Wahoo. (Extract of Euonymus.)

I.

Evaporate 4 fluidounces of the fluid extract in a porcelain dish, on a water bath, at a temperature not exceeding 70 deg. C., with constant stirring to complete dryness. Reduce the product to fine powder and add enough powdered peeled Russian licorice root to make the finished extract weigh 1 av.ounce.—U. S. P.

II. Brit. Pharm. formula for "dry extract of euonymus," which has also been called "euonymin":

Exhaust by the usual process of percolation, using diluted alcohol as the menstruum. Distil off the alcohol, evaporate the remainder to dryness, powder the product as far as possible, and mix with one-fourth of its weight of calcium phosphate, continuing the drying and powdering until a satisfactory product is obtained.

Keep in a well-closed bottle.

Extract, Fluid, of Wahoo.

Prepare according to the general process (see Extracts, Fluid), moistening $16\frac{3}{4}$ av.ounces of drug with $5\frac{1}{2}$ fluidounces of menstruum, and reserving the first 13 fluidounces of menstruum. The menstruum is a mixture of 4 volumes of alcohol and 1 of water.—U. S. P.

Extract, Fluid, of White Oak.

Prepare according to the general process (see Extracts, Fluid), but moistening $16\frac{3}{4}$ av.ounces of drug with $6\frac{1}{2}$ fluidounces of menstruum and reserving the first $11\frac{1}{2}$ fluidounces of percolate. The menstruum is a mixture of 13 fluidrams of glycerin with $14\frac{1}{2}$ fluidounces of diluted alcohol, to be followed by diluted alcohol.—U. S. P.

**Extract, Fluid, of White Pine, Comp.
(Comp. Fluid Extract of Pinus.)**

White pine bark.....av.oz. 4.	gr. 170
Wild cherry.....av.oz. 4.	gr. 170
Balm of gilead buds.....gr.	256
Spikenard.....gr.	256
Bloodroot.....gr.	224
Sassafras.....gr.	128
Chloroform.....fl.dr.	4¼
Morphine acetate.....gr.	12
Alcohol, water, each.....	sufficient

Mix the white pine, wild cherry, spikenard, bloodroot and sassafras, reduce to moderately fine powder, contuse the gilead buds in a mortar, gradually incorporate the powder so as to make a uniform mixture. Moisten this powder with 6 fluidounces of water, set aside in a well-closed vessel for 24 hours; then incorporate with 2 fluidounces of alcohol, pack in a percolator and exhaust by the usual process for making fluid extracts (see Extracts, Fluid), obtaining 15½ fluidounces of product, and using a mixture of 1 volume of alcohol and 3 of water as the menstruum. To this liquid add the chloroform and morphine acetate, dissolving the latter by agitation.

This is described by manufacturers as 4 times the strength of compound syrup of white pine, the latter to be made by mixing 4 fluidounces of the fluid extract with 12 fluidounces of simple syrup. The above is really only 3½ times the strength of the compound syrup of white pine.

Extract, Fluid, of Wild Cherry.

I.

Extract 16¾ av.ounces of drug, in No. 30 powder, by moistening with 5 fluidounces of menstruum, packing firmly in a cylindrical glass percolator, and macerating and percolating in the usual manner for fluid extracts. The percolation is allowed to take place very slowly and is to be stopped when 16 fluidounces of percolate are obtained. This percolate is the finished fluid extract. The menstruum is a mixture of ¾ fluidounces each of glycerin, of alcohol and 9¾ of water, to be followed

by a mixture of 1 volume of alcohol and 4 of water. This menstruum extracts the drug well, and the product mixes clear with syrup.—U. S. P.

The preparation of the U. S. P. 1890 was an "alcoholic fluid extract of wild cherry" made with a menstruum composed of 17 volumes of alcohol and 3 of water.

II. The following makes what is sold as "Fluid Extract of Wild Cherry, Procter's formula, or U. S. P. 1860":

Wild cherry bark, fine pow-

der.....av.oz.	17½
Sweet almond.....av.oz.	2¼
Sugar.....av.oz.	24
Alcohol, water, each.....	sufficient

Moisten the bark with 4 fluidounces of alcohol, pack it firmly in a cylindrical percolator, saturate with alcohol, macerate for 48 hours, and then percolate slowly, gradually adding more alcohol until 3 pints of percolate have passed. From this distil 2½ pints of alcohol on a water bath, add 16 fluidounces of water to the residue, and evaporate on a water bath to 8 fluidounces.

Beat the almond to a paste, and rub this with successive small portions of water, until, after straining through a coarse sieve or cloth, nearly all the substance of the almond has been converted into an emulsion, and 12 fluidounces of liquid have been obtained. Mix this with the liquid first obtained, in a suitable bottle, and, having closely stoppered it, agitate occasionally 24 hours. Then express quickly and strongly through a cloth, and if the expressed liquid measure less than 18 fluidounces, add water to the residue and again express until that quantity is obtained. Filter the expressed liquid through cotton flannel, in a covered funnel, into a bottle containing the sugar. Shake the bottle occasionally until the sugar is all or nearly all dissolved, then strain, and add water, if necessary, through the strainer to make the liquid measure 32 fluidounces.

This makes, of course, only a half-

strength fluid extract. The syrup of wild cherry is directed to be made from it by adding 3 times its volume of simple syrup.

III. Robbin's formula:

Wild cherry, No. 40 powd. .av.oz. $16\frac{3}{4}$
 Sugarav.oz. 3'
 Glycerinfl.oz. $1\frac{1}{2}$
 Alcohol, water, each.....sufficient

Moisten the drug with 8 fluidounces of water, let stand for 24 hours, then mix with the sugar, pack in a percolator, saturate with a mixture of 1 volume of alcohol and 5 of water, macerate for 48 hours, and then percolate with the menstruum until the drug is exhausted. Reserve the first $13\frac{1}{2}$ fluidounces of percolate, add the glycerin to the weak percolate, evaporate this to soft extract, mix with the reserve percolate, and enough of the menstruum to make 16 fluidounces.

This is a full-strength fluid extract which may be used for the extemporaneous preparation of syrup.

Extract, Fluid, of Wild Cherry, Detannated.

Preparations sold by this name may be made like Extract, Fluid, of Wild Cherry, No. I or II, and then detannating as described under Elixir of Cinchona or Elixir of Gentian.

Extract, Fluid, of Wild Cherry for Syrup.

Preparations sold under this name are prepared like Nos. I, II or III mentioned under Extract, Fluid, of Wild Cherry, which see.

Extract, Distilled, of Witchhazel. (Witchhazel or Hamamelis Water or Spirit.)

Witchhazel barkav.lb. 1
 Waterfl.oz. 32
 Alcoholfl.oz. $2\frac{1}{2}$

Macerate the drug with the water for 24 hours, then distil until $13\frac{1}{2}$ fluidounces of distillate are obtained, and add the alcohol.—U. S. P.

This is quite different from the process of the N. F. In this the fresh young twigs and shoots of hamamelis are used,

which are collected for this purpose preferably when the plant is in flower, late in the autumn. This drug is mixed with the alcohol and water, using the same proportions as in the U. S. P. formula, macerating for 24 hours, then distilling off 16 fluidounces by direct heat, or preferably by means of steam.

The liquor hamamelidis or solution of hamamelis of the Brit. Pharm. is prepared by mixing 1 av.pound of fresh witchhazel leaves with 30 fluidounces of water and 3 of alcohol, macerating in a still for 24 hours, and distilling off one-half.

Extract, Fluid, of Witchhazel. (Fluid Extract of Hamamelis.)

Prepare according to the general formula (see Extracts, Fluid), but using the drug (leaves) in No. 40 powder, moistening $16\frac{3}{4}$ av.ounces of it with $5\frac{1}{2}$ fluidounces of menstruum, packing in a conical percolator, reserving the first $13\frac{1}{2}$ fluidounces of percolate, and evaporating the remainder on a water bath. The menstruum for $16\frac{3}{4}$ av.ounces of drug is a mixture of 13 fluidrams of glycerin, $4\frac{3}{4}$ fluidounces of alcohol, and $9\frac{1}{2}$ fluidounces of water, to be followed by a mixture of 1 volume of alcohol with 2 of water.—U. S. P.

The liquid extract of hamamelis of the Brit. Pharm. is made in the same manner, but using diluted alcohol as the menstruum.

Extract of Wormwood.

Wormwood, fine powder....av.oz. 8
 Alcohol, water, each.....sufficient

Exhaust the drug by percolation or any other suitable process, using as a menstruum a mixture of 3 volumes of alcohol and 10 of water. Evaporate the tincture obtained on a water bath to thick extract.—Germ. Pharm. modified.

The yield is about 32 per cent.

Extract, Fluid, of Yellow Dock. (Fluid Extract of Rumex.)

Prepare according to the general process (see Extracts, Fluid). The menstruum is diluted alcohol.—N. F. Appendix and U. S. P. 1890.

Extract, Fluid, of Yellow Dock, Compound.

Yellow dock	av.oz. $8\frac{3}{4}$
False bittersweet	av.oz. $4\frac{1}{2}$
Figwort	av.oz. $2\frac{1}{4}$
American ivy	av.oz. $2\frac{1}{4}$
Diluted alcohol	sufficient

Mix the drugs, reduce to fine powder, and exhaust by percolation or any other suitable process for fluid extracts, using diluted alcohol as a menstruum, the product to measure 16 fluidounces.

Extract, Fluid, of Yellow Parilla. (Fluid Extract of Menispermum.)

I.

Prepare according to the general process (see Extracts, Fluid). The menstruum is a mixture of 3 volumes of alcohol and 1 of water.—N. F. Appendix and U. S. P. 1890.

Extract, Fluid, of Yerba Mansa. (Fluid Extract of Anemopsis.)

Extract the root in very fine powder by any suitable process for fluid extracts, using alcohol as the menstruum.

Extract, Fluid, of Yerba Santa. (Fluid Extract of Eriodictyon.)

I.

Prepare according to the general process (see Extracts, Fluid), moistening $16\frac{3}{4}$ av.ounces of drug with $6\frac{1}{2}$ fluidounces of menstruum, reserving the first $14\frac{1}{2}$ fluidounces of percolate, and evaporating the remainder at not above 50 deg. C. The menstruum is a mixture of 4 volumes of alcohol with 1 of water.—U. S. P.

II. A fluid extract that will mix directly with simple syrup without turbidity can be made as follows:

Yerba santa, 40 powder...	av.oz. $16\frac{3}{4}$
Potassium carbonate	av.oz. $3\frac{3}{4}$
Ammonia water, alcohol,	
water, each	sufficient

Mix ammonia water and water in the proportion of 1 volume of the former to 7 of the latter. Moisten the drug with 8 fluidounces of this menstruum and pack it firmly into a cylindrical percolator; macerate 24 hours and percolate slowly until 3 pints of percolate are ob-

tained. To this add the potassium carbonate, and evaporate until a pasty residue is left. Stir this well with 8 fluidounces of alcohol gradually added. Let the pasty precipitate subside and decant the supernatant liquor; to the residue gradually add 8 fluidounces of alcohol as before. Pour this mixture upon a strainer and force the liquid out. Should the liquid measure more than 16 fluidounces, evaporate off the excess of alcohol. Set the mixture aside for 24 hours and decant the clear liquid from the scant crystalline deposit.

Extract, Fluid, of Yerba Santa, Aromatic.

A preparation corresponding to the commercial article of the above name may be made as follows:

Fluid extract of yerba santa,	
U. S. P.	fl.oz. 4
Fluid extract of cardamom.....	fl.oz. 1
Oil of cinnamon	m. 40
Oil of clove	m. 40
Oil of orange	m. 80
Solution of potassa.....	fl.oz. 3
Water	fl.oz. 4
Alcohol	fl.oz. 4
Talcum, purified	av.oz. $\frac{1}{2}$
Diluted alcohol	sufficient

Rub the fluid extracts in a mortar with the talcum, add the solution of potassa, stir thoroughly, incorporate the water, add the oils previously dissolved in the alcohol, and filter, adding through the filter, if necessary, enough diluted alcohol to make 16 fluidounces of product.

This is not properly a fluid extract; it is used for making aromatic syrup of yerba santa. It is 8 times the strength of the latter, which is made from it by mixing 2 fluidounces with 14 of simple syrup.

Fats.

Fats, or greases, more properly termed lards, may be found under the latter designation. For Adeps Lanæ, see Wool Fat.

Fat, Wool.

See Wool Fat.

Flannel, Canton, Absorbent.

This is a cheap and efficient substitute for patent lint and may be prepared by boiling uncolored canton flannel with a 3 per cent. solution of caustic soda for $1\frac{1}{2}$ to 2 hours, until all the fatty matter in the fibers is decomposed, washing several times in water, then soaking for 15 minutes in a $1\frac{1}{2}$ per cent. solution of hydrochloric acid to neutralize any traces of soda remaining in the fibers and to bleach the fabric, wash again several times in water, wring out in a machine, and dry.

Fluidextracts.

See Extracts, Fluid.

Fulgokali.

Caustic potassa	av.oz. 1
Wood soot	av.oz. 5
Water	sufficient

Dissolve the potassa in a sufficiency of water, about 32 fluidounces, add the soot, boil for one hour, dilute largely with water, filter, evaporate, filtrate to dryness, and place in a well-corked bottle.

The dose is 2 or 3 grains.

Gargle, Borax, Mackenzie's.

Borax	av.oz. $\frac{3}{4}$
Glycerin	fl.dr. 5
Tincture of myrrh.....	fl.dr. 5
Distilled water	fl.oz. $14\frac{1}{2}$

Dissolve the borax in the water and add the other ingredients.—H.

Gauzes. (Carbasa—Telæ.)

Pharmacists may conveniently prepare their own medicated gauzes, which will be of equal value to the products of the large manufacturing houses.

To make a satisfactory medicated gauze, a proper kind of plain gauze (cheese-cloth) should be employed. This may be made from crude or raw gauze by a process similar to that for making purified cotton from crude cotton (see Cottons), but this is not practicable for pharmacists and is therefore not advised. The commercial gauze may be purified, if desired, before medication, by first washing with a solution of sodium carbonate, then with a solution of

chlorinated lime, then with a solution of sodium thiosulfate, subsequently washing repeatedly with water.

In purchasing absorbent gauze, which should also be bleached, for surgical dressings, great care must be exercised in its selection. The gauze should be perfectly free from fatty and resinous matter and therefore perfectly absorbent. The absorbency may be determined by dipping the end of a roll into water and observing how rapidly capillary action takes place.

This gauze should be one yard wide and should have 30 to 35 meshes or threads each way to the inch. It may be said that one square yard should weigh about 600 grains, but the gauze recommended by the N. F. weighs considerably more, about 785 grains, and the best gauze of many reputable manufacturers weighs less, about 1 av. ounce. Still lighter (cheaper, inferior) grades of gauze are obtainable and are used for dressings, but the heavier kinds are preferred as they contain proportionately more of the medicament. Very heavy gauzes are, however, not required, as they would contain a needlessly large amount of medicating material. Most manufacturers use gauzes of different weights which they sell at widely different prices.

As a rule good absorbent gauze will retain, after expression, $1\frac{1}{4}$ times its own weight of liquid, so that, for example, if 4 pounds of gauze be dipped into a solution and expressed, the product will weigh 9 pounds. The particular kind of gauze recommended by the National Formulary is what is known commercially as "Stillwater" or "Le-high E."

When gauze is to be impregnated, it is first necessary to determine its weight, then immerse in the antiseptic solution (which should be prepared with reference to the weight of the gauze), knead for 10, 15 or 20 minutes, then wring or press out to such a point

that just the required percentage of medicament shall remain in the material, and finally dry. When immersing in the liquid, the cloth should not be folded; and in expressing, a clothes wringer may be employed, care being taken to avoid contact with any metallic parts. It may be necessary in order to avoid such contact to enclose the gauze in parchment paper; holes may be cut into the latter to allow the liquid to escape readily.

Instead of immersing the gauze in a large volume of fluid, and then expressing, it may be immersed in just sufficient liquid for proper medication, kneaded for 10, 15 or 20 minutes, then put under weights for several hours, and dried. It is advisable to turn the cloth about repeatedly in the meantime, while in some cases the application of a temperature of 50 to 60 deg. C. may be advisable. As an extra precaution for even impregnation, the goods may, before drying, be placed in a press and subjected to as much pressure as it will permit without any of the liquid being forced out. Some unscrupulous manufacturers spray the gauze with the liquid instead of immersing, but this is an inferior method of medication.

In impregnating gauzes on the small scale, ordinary enameled iron or porcelain evaporating or granite dishes may be employed. On the large scale, larger vessels of the same or similar material or of well-glazed earthenware are employed.

Gauzes may be dried after impregnation, if the liquid used be alcoholic or aqueous by suspending from strings or wooden rods, but if ethereal or fatty, the gauze should be wound as it leaves the press, upon reels and allowed to remain for at least 24 hours to dry, after which it may be cut into suitable lengths. Drying is usually to be performed in a dark place.

After drying, the gauze may be folded and then enclosed or packed in tin foil, waxed paper, parchment paper, bot-

ties, tin boxes, or pressed paper boxes, according to the kind of medicament or to the price to be obtained. The best practice of manufacturers is to pack the gauze into sterilized bottles or pressed paper boxes, the latter being coated with paraffin.

If the pharmacist desires to make medicated gauzes fresh as wanted, he should keep on hand the plain gauze in 1-yard and 5-yard lengths, also stock solutions of impregnating liquids, representing the antiseptics most commonly employed. After saturating, the gauze may be expressed, and then at once rolled in parchment paper or other suitable enclosing material.

Formerly all gauze was of the "dry" or "hard" kind, like the carbolized gauze of the N. F.; what is now mostly in use is the so-called "soft" or "moist" kind. The latter is permanently moist and soft, due to the presence of a considerable proportion of glycerin.

The processes of manufacturers for antiseptic gauzes vary greatly and each manufacturer has more than one process for each kind of gauze, each one making, as a rule, a moist and a dry gauze of the same medication. In this work are given satisfactory or workable formulas for different medicated gauzes, but no attempt is made to supply formulas for all kinds of gauzes made by manufacturers. Pharmacists may vary the formulas here given, as may be determined by experience and trial.

Gauzes made with solutions containing resinous or waxy matter are non-absorbent, whereas such as are made with water, alcohol, or glycerin are highly absorbent and are therefore generally preferred.

A prominent manufacturer of surgical dressings gives the following as the various steps in the process of making antiseptic gauzes:

1. Sterilization of apparatus and utensils.
2. Personal preparation of operators.

3. Sterilization of all materials used in the dressings.

4. Sterilization of containers.

5. Handling and packing under rigid systems of aseptic technique.

6. Re-sterilization of the finished dressings within their containers.

7. Sealing hermetically during final sterilization.

8. Check bacteriological tests.

The sterilization so stated to be conducted in specially built chambers by currents of saturated steam (unmixed with air) circulating under pressure and in vacuum. By these processes every fiber is penetrated. Bacteriological tests have demonstrated that no form of bacterial life can withstand this treatment.

Considerable controversy has been waged in this country within the last few years regarding the correct method of expressing the strength of medicated gauzes. Some thought that the expression 10 per cent. gauze, for example, should signify that the gauze has been impregnated with a 10 per cent. solution of the medicament. Others claimed that it should mean that 10 av. ounces of the gauze originally used should contain 1 av. ounce of medicament. Others again claimed that strength should be expressed in relation to the finished product meaning gauze, medicament, and extraneous material which has been used, such as resin, glycerin, paraffin, etc. A 10 per cent. gauze of this kind would contain, for example, 1 av. ounce of medicament, $\frac{1}{2}$ each of resin and oil, and 8 of gauze. Still others claimed that the strength should be expressed in the number of grains or grams to the square inch, square foot, or square centimeter or decimeter.

Different methods of designation obtain among the manufacturers of surgical dressings. Obviously those that make a so-called 10 per cent. medicated gauze by dipping in a liquid containing 10 per cent. of medicament can afford to offer goods cheaper than others can.

The most common method, and the

one used in this work, is to have the medicament in the gauze bear a definite relation to the original fabric. Some manufacturers now also state, on the label of the package, the amount of drug to a certain area of gauze.

Gauze, Alembroth. (Sal Alembroth Gauze.)

Ammonium chlorid	gr. 7
Mercuric chlorid	gr. 18
Distilled water	fl.oz. 23½
Absorbent gauze	av.oz. 16

Dissolve the salts in the water, thoroughly saturate the fabric with this solution as described above under Gauzes, which see, express to a weight of 36 av. ounces, and dry suspended on strings or wooden rods, in a dark place.

Weaker or stronger gauze may be prepared by decreasing or increasing the proportion of the salts.—D.

Gauze, Aluminum Acetate.

Burow's process:

Solution of aluminum acetate	fl.oz. 12
Distilled water	fl.oz. 12
Absorbent gauze	av.oz. 16

Mix the solution and water, saturate the fabric with this liquid as described above under Gauzes, which see, express to a weight of 36 av. ounces, and dry suspended on strings or wooden rods.

This makes a 5 per cent. gauze. A 10 per cent. gauze may be prepared by using the solution of aluminum acetate alone for impregnation of the fabric.—D.

Gauze, Benzoated.

Process of Von Bruns, Jr.:

	5 per cent.	10 per cent.
Benzoic acid	av.oz. 1	av.oz. 2
Castor oil	gr. 180	gr. 360
Alcohol, 95%	fl.oz. 28	fl.oz. 26½
Absorbent gauze	av.oz. 16	av.oz. 16

Dissolve the acid and oil in the alcohol, saturate the fabric with this solution as directed above under Gauzes, which see, express to a weight of 36 av. ounces, and dry upon a reel.

Instead of the oil alone, a mixture of 90 grams each of castor oil and resin (or 180 gr. each for the 10 per cent. gauze) may be used.—D.

Gauze, Borated.

Boric acidav.oz. 2
Water, boilingfl.oz. 22
Absorbent gauzeav.oz. 16

Dissolve the acid in the water, saturate the fabric while the solution is warm, as directed above under Gauzes, which see, then express to a weight of 36 av. ounces, and dry on strings or wooden rods.

This makes a 10 per cent. gauze. A 5 per cent. gauze may be made, by reducing the boric acid in the liquid to 1 av. ounce.

To prevent the acid from dusting off the gauze, about 5 per cent. of glycerin may be mixed with the water, that is about 1 to 1½ fluidounces of glycerin and 20 or 20½ of water may be used. Or a small quantity of tincture of myrrh may be added to the liquid, merely enough to impart a slight adhesiveness when dried upon the fabric, without, however, interfering with the absorbent power of the latter.—D.

A "moist" gauze may be prepared by substituting glycerin for an equal portion of water, say, about 4 fluidounces.

Gauze, Carbolized.

I.

Resin, coarse powder.....av.oz. 2
Castor oilav.oz. ¼
Carbolic acid, crystal.....av.oz. ½
Alcoholfl.oz. 13
Absorbent gauzesufficient

Dissolve the resin, oil and acid in the alcohol. Immerse in the mixture loosely-folded pieces of gauze, allow them to become thoroughly saturated (about 15 minutes), then take them out and press out the excess of liquid, until the weight of the impregnated gauze amounts to 17 av. ounces for every 10 av. ounces of the original fabric. Spread out the pieces horizontally, and as soon as the alcohol has nearly all evaporat-

ed, fold and wrap the pieces in paraffin paper, and preserve them in air-tight receptacles.

The impregnated gauze, when dry, contains about 2.5 per cent. of carbolic acid. A 5 per cent. gauze may be made by doubling the amount of acid oil, and resin, and decreasing the alcohol to 11 fluidounces.—N. F. (1st Ed.).

II. Process of Von Bruns, Jr.:

Resinav.oz. 9½
Castor oilav.oz. 1
Or stearinav.oz. 2
Carbolic acid, crystal.....av.oz. 2½
Alcohol, 95 per cent.....fl.oz. 21
Absorbent gauzeav.oz. 16

Dissolve the resin, oil (or stearin) and acid in the alcohol, warm gently, saturate the fabric as described above under Gauzes, which see, express to a weight of 36 av. ounces, and dry for 24 hours on a reel.

This makes a 10 per cent. gauze. A 5 per cent. gauze may be prepared by using one-half as much resin, oil (or stearin) and acid, and increasing the alcohol to 28 fluidounces.—D.

This formula is almost like that of the N. F. (No. I.).

III. Lister's process:

	5 per cent.	10 per cent.
Carbolic acid,		
crystalav.oz. 1	av.oz. 2
Resinav.oz. 10	av.oz. 10
Paraffinav.oz. 14	av.oz. 14
Absorbent		
gauzeav.oz. 16	av.oz. 16

Melt the acid, resin and paraffin together, maintain the mixture at a temperature of 50 to 60 deg. C. for 2 hours, macerate the fabric in it during this time, weighting the fabric down, express between warm plates for ½ hour, and pack suitably.—D.

IV.

Carbolic acid, crystal.....av.oz. 1
Alcoholav.oz. 9, or fl.oz. 10½
Absorbent gauzesufficient

Dissolve the acid in the alcohol, saturate the fabric with this solution, express, and dry.—Hungarian Pharm.

V. The following is a cheap process:

Carbolic acid, crystal.....av.oz.	1
Petrolatum (white preferred)	av.oz. 2
Benzine or gasoline.....fl.oz.	32
Absorbent gauze	av.oz. 16

Dissolve the acid and petrolatum in the benzine or gasoline, saturate the fabric as quickly as possible as described above under Gauzes, which see, express quickly to a weight of 36 av. ounces, dry, and wrap as usual.

VI. England's process modified:

Carbolic acid, crystal.....av.oz.	2
Resin	av.oz. 2½
Glycerin	av.oz. 1¼
Alcohol	fl.oz. 11½
Benzine or gasoline.....fl.oz.	16
Absorbent gauze	av.oz. 20

Triturate the resin in a mortar with the benzine or gasoline, add the alcohol in which the acid has previously been dissolved, and then add the glycerine of this solution, kneading well to secure uniform diffusion, and hang on frames to dry, which it does very quickly. Fold in rolls and wrap in waxed paper.

The product is a 10 per cent. gauze. The resin prevents the washing away of the acid by the discharge from the wound while the glycerin reduces the brittleness caused by the resin and also helps the retention of the acid in a more than ordinarily soluble form. The benzine or gasoline reduces the cost of the product.

VII. The above are all "dry" gauzes. A 5 per cent. "moist" gauze may be prepared from 1 av. ounce of crystal carbolic acid, 4 fluidounces of glycerin and 18 fluidounces of water, saturating 16 av. ounces of absorbent gauze with this solution as described above under Gauzes, which see, express to a weight of 36 av. ounces, and dry upon strings or wooden rods.

Gauze, Creolin.

Creolin	av.oz. 1
Distilled water	fl.oz. 28
Absorbent gauze	av.oz. 16

Dissolve the creolin in the water, saturate the fabric with this solution as described above under Gauzes, which see, express to a weight of 36 av. ounces, and dry suspended on strings or wooden rods.—D.

Gauze, Eucalyptol.

This may be prepared like eucalyptus gauze, substituting eucalyptol for the oil of eucalyptus. See Gauze, Eucalyptus.

Gauze, Eucalyptus.

I. Lister's process:

Oil of eucalyptus	av.oz. 1
Dammar resin	av.oz. 6
Paraffin	av.oz. 9
Absorbent gauze	av.oz. 16

Prepare like Lister's carbolized gauze.

See Gauze, Carbolic, No. III.—D.

The above makes a 4 per cent. gauze. A gauze containing 5 per cent. of eucalyptus oil may be prepared by increasing the latter to 1¼ av. ounces.

II. Process of Nussbaum:

Oil of eucalyptus	av.oz. 2
Absolute alcohol	av.oz. 10 or fl. oz. 12½
Distilled water, boiling....	fl.oz. 17
Absorbent gauze	av.oz. 16

Dissolve the oil in the alcohol, add the water, immediately saturate the fabric with this solution as described above under Gauzes, which see, express to a weight of 36 av. ounces, and dry on strings or wooden rods.—D.

The above makes a 7½ per cent. gauze. A 5 per cent. gauze may be prepared by making the impregnating solution from 1 av. ounce of oil, 9 fluidounces of absolute alcohol and 13 fluidounces of boiling distilled water.

Gauze, Iodoform.

I.

Iodoform	av.oz. 2
Stronger ether.....av.oz.	8 or fl.oz. 10½
Alcohol	av.oz. 8 or fl.oz. 9¼
Tincture of benzoin	av.oz. 1 or fl.oz. 1
Glycerin	av.oz. 1
Absorbent gauze	sufficient

Dissolve the iodoform in the ether, then add the alcohol, tincture and glycerin. Immerse in a weighed quantity of

this solution, contained in a suitable vessel, the exact amount of gauze required to absorb the whole of it to produce a product of a prescribed percentage of iodoform, work it about with a pestle so as to impregnate it uniformly; then take it out, and hang it up to dry, in a horizontal position, and in a dark place. Lastly, wrap it in paraffin paper and preserve it in airtight receptacles.—N. F. (1st edition).

To calculate the amount of muslin and of iodoform solution required to obtain a product approximately of any required percentage of iodoform, let x denote this required percentage. Then take of the above iodoform solution ten (10) times this quantity (or $10x$). Also multiply the required percentage (x) by three (3), divide the resulting product by two (2), and subtract the quotient from one hundred (100). The remainder represents the number of parts by weight of gauze.

II. Process of Von Mosetig: 10 per cent.

Iodoform	av.oz. 2
Stronger ether.....	av.oz. 14 or fl.oz. 19
Alcohol	av.oz. 14 or fl.oz. 16
Absorbent gauze	av.oz. 20

20 per cent.

Iodoform	av.oz. 4
Stronger ether.....	av.oz. 24 or fl.oz. 32
Absorbent gauze	av.oz. 16

Dissolve the iodoform in the ether, or mixed ether and alcohol, impregnate the fabric with all of this solution, wrap in parchment paper, weight down for several hours, and dry upon a reel.

All the operations must be conducted under exclusion of day light, either in a dark place or in a room which receives illumination through amber or ruby glass.

A 5 per cent. gauze may be prepared by using the first formula with half the amount of iodoform.

Gauze of greater strength than 20 per cent. may be prepared by re-dipping the impregnated and dried gauze. Another plan would be to saturate the gauze with a solution of iodoform in

chloroform in which liquid iodoform is somewhat more soluble than in stronger ether.

The gauze used for impregnation with iodoform must be free even from traces of starch as this would cause decomposition of the iodoform and liberation of iodine. Gauze containing starch may be used, however, if it has first been treated with a $\frac{1}{4}$ per cent. solution of sodium thiosulfate.—D.

III. Process of Von Billroth:

Resin	av.oz. 6
Alcohol	fl.oz. 21
Stronger ether	fl.oz. $2\frac{1}{2}$
Glycerin	av.oz. 3
Iodoform, impalpable powder	av.oz. 10
Absorbent gauze	av.oz. 20

Dissolve the resin in the alcohol and ether, add the glycerin, impregnate the gauze with all of this solution by kneading and subsequent weighting down for 2 or 3 hours, then dust on the iodoform as evenly as possible, wind the gauze on a reel with exclusion of daylight, and dry on the reel for 24 hours in a dark place.

The gauze may be prepared extemporaneously by rubbing the iodoform into carbolized gauze, using 280 grains for 1 yard of gauze.

This gauze contains 50 per cent. of iodoform. A weaker gauze may of course be prepared by using less iodoform.

The iodoform may be dusted on the gauze from a pepper box or something of this character.

Another iodoform gauze used by Billroth was made by dusting $3\frac{1}{4}$ av. ounces of impalpable iodoform into 16 av. ounces of dry gauze and then rubbing in thoroughly. The iodoform must be very uniformly distributed.—D.

The product is a 20 per cent. gauze.

IV. Process of Woelfer:

Resin	av.oz. 5
Alcohol	fl.oz. 23
Glycerin	av.oz. 4
Iodoform, impalpable powder	av.oz. $3\frac{1}{4}$
Absorbent gauze	av.oz. 16

Dissolve the resin in the alcohol, add the glycerin, saturate the fabric with this solution by kneading and subsequent weighting down for 2 or 3 hours, then dusting the moist gauze uniformly with the iodoform, winding upon a reel, and drying on the latter for 24 hours. Day light must be excluded during the entire process.—D.

The product is a 30 per cent. gauze. A weaker or stronger gauze may be prepared by using less or more iodoform.

Gauze, Iodol.

	10 per cent.	20 per cent.
Iodol	av.oz. 2	av.oz. 4
Glycerin	av.oz. 1	av.oz. 2
Alcohol	fl.oz. 45	fl.oz. 39

Absorbent
gauze

av.oz. 20	av.oz. 20
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Dissolve the iodol in the alcohol by the aid of a gentle heat, about 50 deg. C., gradually add the glycerin, impregnate the fabric with all of this solution, then wrap in parchment paper, weight down for 6 hours, then dry on a reel or suspended on wooden rods.

All these operations must be conducted under exclusion of daylight.

The fabric must be perfectly free from starch. A gauze containing starch may be used if it be washed thoroughly in water, saturated with $\frac{1}{4}$ per cent. solution of sodium thiosulfate, and then dried thoroughly.—D.

Gauze, Mercuric Chlorid. (Sublimated or Corrosive Sublimate Gauze.)

I. Bergmann's process:

Mercuric chlorid	gr. 35
Glycerin	av.oz. 3
Alcohol	fl.oz. $3\frac{1}{2}$
Water	fl.oz. 23
Absorbent gauze	av.oz. 16

Dissolve the mercuric chlorid in the alcohol, add the glycerin and water, saturate the fabric with this solution as described above under Gauzes, which see, express to a weight of 36 av. ounces, and dry suspended on strings or wooden rods under exclusion of daylight.—D.

This makes a $\frac{1}{3}$ per cent. gauze. A 1 in 1000, or $\frac{1}{10}$ per cent., may be prepared by using only 11 grains of mercuric chlorid with the other ingredients mentioned above.

II. Process of Maas:

	$\frac{1}{4}$ per cent.	$\frac{1}{2}$ per cent.
Mercuric chlorid.....	gr. 22	gr. 44
Sodium chlorid.....	av.oz. 10	av.oz. 10
Glycerin	av.oz. 4	av.oz. 4
Distilled water.....	fl.oz. 23	fl.oz. 23
Absorbent gauze	av.oz. 20	av.oz. 20

Dissolve the mercuric and sodium chlorid in the water, add the glycerin, impregnate the fabric with the entire volume of solution, kneading thoroughly, weight down for several hours, and then dry suspended on strings or wooden rods, with exclusion of daylight.—D.

A 1 in 1000, or $\frac{1}{10}$ per cent., gauze may be prepared according to the above, but using 9 gr. of mercuric chlorid.

IV. Process of the German Military Sanitation Department:

Mercuric chlorid	gr. 46
Glycerin	av.oz. $5\frac{1}{4}$
Alcohol	fl.oz. 12
Distilled water	fl.oz. 15
Fuchsin	gr. 1

Dissolve the mercuric chlorid in the alcohol, add the other ingredients and with this liquid impregnate 25 yards of gauze, then passing through a wringer, and drying with exclusion of daylight.

The coloring matter is for the purpose of distinguishing the medicated from the unmedicated gauze.—D.

IV. England's process (modified):

Mercuric chlorid	gr. $3\frac{1}{2}$
Alcohol	fl.oz. $\frac{1}{2}$
Distilled water	fl.oz. $20\frac{1}{2}$
Absorbent gauze	av.oz. 16

Dissolve the chlorid in the alcohol, add the water, impregnate the gauze with all of this solution, kneading thoroughly, and hang up to dry, avoiding exposure to daylight.

The product is a 1 in 2000 gauze. A 1 in 1000 preparation may be prepared by using 7 grains of mercuric chlorid.

V. Martinson's formula:

Mercuric chlorid	gr. 21
Sodium chlorid	gr. 7
Glycerin	av.oz. $\frac{1}{2}$
Distilled water	fl.oz. $15\frac{1}{2}$
Absorbent gauze	av.oz. 16

Dissolve the salts in the water, add the glycerin, tie the gauze into a compact roll with a thread, place in a glass jar, pour the solution over, macerate for 12 hours, and then spread out to dry.

This makes a $\frac{3}{10}$ per cent. gauze. A 1 in 1000, or $\frac{1}{10}$ per cent., may be prepared by using only 7 grains of mercuric chlorid.

VI. With tartaric acid, $\frac{1}{4}$ per cent.:

Mercuric chlorid	gr. 25
Tartaric acid	gr. 100
Distilled water	fl.oz. 27
Absorbent gauze	av.oz. 16

Dissolve the chlorid and acid in the water, saturate the fabric with this solution as above directed under Gauzes, which see, express to a weight of 36 av. ounces, and dry suspended on strings or wooden rods, with exclusion of daylight.

VII. Lister's sero-sublimate or mercury albuminate gauze:

Mercuric chlorid	gr. 45
Horse-blood serum	av.oz. $10\frac{1}{2}$
Distilled water	fl.oz. 15
Absorbent gauze	av.oz. 16

Rub the mercuric chlorid to fine powder, triturate with the serum until dissolved, add the water, strain, saturate the fabric with this solution as described above under Gauzes, which see, express to a weight of 36 av. ounces, and dry suspended on strings or wooden rods, with exclusion of daylight.

Inasmuch as horse-blood serum is not always obtainable, the following solution may be used for the above:

Mercuric chlorid	gr. 44
Sodium chlorid	gr. 175
White of egg	av.oz. $1\frac{1}{2}$
Distilled water	fl.oz. 24

Rub the two chlorids together, dissolve them by trituration with the white of egg which has been beaten to a froth and then allowed to become liquid again, add the water, strain through a thick linen cloth, and saturate the gauze

with this liquid as before.

For the white of fresh egg may be substituted the dried egg white which is now commercially available; one-tenth as much of this is to be used as of the fresh egg-white.—D.

Gauze, Mercurio-Zinc Cyanid.

In making this gauze, it is first necessary to prepare the cyanid of zinc and mercury, for which the following is the process of Lister: Dissolve finely powdered mercuric cyanid completely in a warm concentrated solution of potassium cyanid (the latter containing 95 per cent. of pure salt) in distilled water, adding an extra fluidounce of distilled water for every 180 grains of mercuric cyanid used (to prevent crystallization), allow the solution to cool, precipitate with a sold saturated solution of zinc sulfate, wash the precipitate free from potassium salt with cold distilled water, and dry, preferably over caustic soda or on porous tiles. The product contains 15 per cent. of mercuric cyanid.

The gauze is prepared in the same manner as the other gauzes, usually so as to contain when dry 3 per cent. of the salt. The latter is dissolved in a 1 in 4000 solution of mercuric chlorid in distilled water; glycerin may be added if desired. Lister used a 5 per cent. carbolic acid solution instead of the mercuric chlorid solution.

Lister usually colors the salt; at first hematoxylin was used, latterly rosaniline. Before using the gauze he originally recommended moistening it with a 1 in 4000 solution of mercuric chlorid but now a 1 in 20 carbolic acid solution is advised.

Gauze, Naphthalin.

Naphthalin, pure	av.oz. 4
Resin	av.oz. 2
Alcohol	fl.oz. 23
Absorbent gauze	av.oz. 20

Dissolve the naphthalin and resin in the alcohol by the aid of heat, impregnate the gauze with all of this solution subsequently weighting down for 3

hours, then winding on a reel, drying upon the latter for 24 hours, and then packing.

This makes a 20 per cent. gauze. A 10 per cent. gauze may be prepared by using 2 av. ounces of naphthalin and 1 of resin; a 5 per cent. by using 1 av. ounce of naphthalin and $\frac{1}{2}$ of resin.

Expressing the liquid is not practicable as the naphthalin would crystallize out as soon as the temperature falls.—D.

Gauze, Resorcin.

Resorcin	av.oz. 2
Glycerin	av.oz. 2
Distilled water	f.oz. 13
Alcohol	f.oz. $8\frac{1}{2}$
Absorbent gauze	av.oz. 16

Dissolve the resorcin in the mixed liquids, saturate the fabric with this solution as described above under Gauzes, which see, express to a weight of 36 av. ounces, and dry.—D.

This makes a 20 per cent. gauze.

Gauze, Salicylated.

I. Process of Thiersch:

	5 per cent.	10 per cent.
Salicylic acid...	av.oz. 1	av.oz. 2
Alcohol	f.oz. $8\frac{1}{2}$	f.oz. 13
Distilled water,		
warm	f.oz. 16	f.oz. $11\frac{1}{4}$
Absorbent		
gauze	av.oz. 16	av.oz. 16

Dissolve the acid in the alcohol, add the water, saturate the fabric with this solution as described above under Gauzes, which see, express to a weight of 36 av. ounces, and dry on strings or wooden rods.—D.

II. Process of Von Bruns, Jr.:

	5 per cent.	10 per cent.
Salicylic acid...	av.oz. $1\frac{1}{4}$	av.oz. $2\frac{1}{2}$
Castor oil ...	av.oz. $\frac{1}{2}$	av.oz. 1
Alcohol, 95 p. c. f.oz.	36	f.oz. 33
Absorbent		
gauze	av.oz. 16	av.oz. 16

Dissolve the acid and oil in the alcohol, saturate the fabric with this solution, express to a weight of 36 av. ounces, wind upon a reel, and dry on the latter.

Instead of the castor oil alone, a mixture of $\frac{1}{4}$ av. ounce of castor oil and

resin (or $\frac{1}{2}$ av. ounce of oil and resin) may be used.—D.

Gauze, Tannin.

Tannic acid	av.oz. 10
Distilled water	f.oz. $11\frac{1}{2}$
Alcohol	f.oz. $13\frac{1}{2}$
Absorbent gauze	av.oz. 20

Dissolve the acid in the mixed alcohol and water, impregnate the gauze with all of this solution, contained in a warm basin, by kneading, subsequently weighting down, and then hanging in a room or chamber, having a temperature of about 20 deg. C., for 3 or 4 hours until dry.

The dry gauze, which contains 50 of tannin, should be protected from light and air.—D.

Gauze, Thymol.

Ranke's process:

Thymol	av.oz. 1
Resin	av.oz. 1
Spermaceeti	av.oz. 10
Alcohol ...	f.oz. 29
Absorbent gauze	av.oz. 20

Dissolve the thymol, resin and spermaceeti in the alcohol by the aid of a gentle heat, impregnate the gauze with all of this solution, subsequently weighting down for several hours, then wind upon a reel, and dry for 24 hours.—D.

This makes a 5 per cent. gauze.

Gauze, Zinc Sulfocarbonate.

Process of Bottini:

Zinc sulfocarbonate	av.oz. 1
Water, warm	f.oz. $14\frac{1}{2}$
Absorbent gauze	av.oz. 10

Dissolve the salt in the water, impregnate the gauze with all of the solution, weight down for several hours, and dry suspended on strings or wooden rods.—D.

Gelanthum.

This has been recommended by Unna as a water-soluble vehicle for applying remedies in cutaneous affections. It may be prepared as follows:

Gelatin, best	gr. 45
Tragacanth, flake, best.....	gr. 45
Glycerin	gr. 90
Distilled water, to make...	av.oz. 8

Mix the gelatin, tragacanth and glycerin with 4 fluidounces of water, let

stand for 24 hours, stirring occasionally, then heat on a water bath till the gelatin is dissolved, strain forcibly through muslin, and add through the latter enough water to make the product weigh 4 av. ounces. A small amount of salicylic acid should be added for preservation.

Gelatin, Iceland Moss. (Cetraria Gelatin—Iceland Moss Jelly—Gelatina Lichenis Islandica.)

Iceland mossav.oz. 3
Sugarav.oz. 3
Waterfl.oz. 96

Mix the moss and water, heat on a boiling water bath, stirring occasionally for half an hour, then strain, express lightly, to the liquid add the sugar, and evaporate, on the water bath, constantly stirring, so that the product, after removal of foam, will weigh 10 av. ounces.—Germ. Pharm. (2nd).

This should be made freshly as wanted.

Gelatin, Irish Moss. (Carrageen or Chondrus Jelatine or Jelly.)

I.

Irish mossav.oz. 16
Watersufficient

Wash the Irish moss with cold water, then place it in a suitable vessel, add 3 gallons of hot water, and heat it on a boiling water bath, for 15 minutes, frequently stirring. Strain the decoction, while hot, through a strong muslin strainer; return the strained, mucilaginous liquid to the water bath, evaporate it to a semi-fluid consistence, then transfer it to shallow, flat-bottomed trays, and evaporate it at a temperature not exceeding 90 deg. C., so that the gelatin may become detached in scales.—N. F.

Irish moss gelatin thus prepared furnishes a mucilage of Irish moss which is opaque, like that made directly from the moss itself. It may be prepared so as to yield a transparent mucilage by following the plan pointed out under Mucilage of Irish Moss, which see.

II.

Irish mossav.oz. 1
Sugarav.oz. 2
Waterfl.oz. 38

Mix the moss and water, heat on a boiling water bath for half an hour, then strain, express lightly, to the liquid add the sugar, and evaporate, on the water bath, stirring constantly, so that, after the removal of foam, the product will weigh 10 av. ounces.—Germ. Pharm. (2nd).

This preparation must be freshly prepared as wanted.

Gelatins, Medicated, Unna's.

These are made to contain from 5 to 10 per cent. of gelatin and 35 to 70 per cent. water, the balance being glycerin and medicament. Some of the medications are acetic acid (5 per cent. of glacial), salicylic acid (5 and 10 per cent.), aluminum acetate (10 per cent. of dry basic salt), aluminum hydrate (10 per cent.), camphor (5 per cent.), chloral hydrate (10 per cent.), chrysarobin (5 per cent.), ichthyol (10 per cent.), iodoform (5 and 10 per cent.), litharge (10 per cent.), betanaphthol (6 per cent.), lead acetate (10 per cent.), lead carbonate (10 per cent.), lead iodid (10 per cent.), mercuric chlorid (1/10 per cent.), sulfur (10 per cent. of precipitated), zinc (two kinds, hard and soft, each containing 10 per cent. of oxid, see formulas below), zinc salicylate (about 17 per cent.), zinc ichthyol (2 per cent. ichthyol and 10 per cent. zinc oxid), and zinc thiol (10 liquid thiol and 10 per cent. zinc oxid). All are intended for external application.

Gelatin, Zinc. (Glycerinated Zinc Gelatin—Zinc Jelly.)

Unna's:

Hard. Soft.

Zinc oxidparts 2 3
Gelatin, bestparts 6 3
Glycerinparts 6 5
Waterparts 6 9

The Brit. Form. directs 3 av. ounces each of zinc oxid and gelatin, 5½ fluid-ounces of glycerin and 9 fluidounces of

distilled water. Triturate the zinc oxid to a smooth paste with the glycerin, then add the gelatin previously dissolved in the water by aid of heat, and mix well.—H.

Gelatole Emulsion of inc Oxid. (Zinc Gelatole—Zinc Gelatole Ointment.)

Bosetti's formula:

Zinc oxid	gr. 90
Olive oil	gr. 250
Gelatin	gr. 55
Glycerin	av.oz. 1¼
Boric acid	gr. 35
Distilled water, to make.....	av.oz. 8

Rub the oxid to a smooth mixture with the oil, also dissolve the gelatin in 3 fluidrams of hot water, and gradually add the oily mixture to the latter, constantly triturating. Dissolve the boric acid in the glycerin mixed with 5 fluid-ounces of water, add this, while warm, gradually and with constant stirring, to the other mixture, and then add enough water to make 8 av. ounces.—D.

Globules, Homeopathic.

See Medications, Homeopathic.

Glue, Zinc.

Unna's:

Gelatin, best	av.oz. 1
Zinc oxid	av.oz. 1
Distilled water	fl.oz. 4

Dissolve the gelatin in the water by the aid of heat, and add the oxid, previously rubbed to fine powder.

This is used for obtaining stiff dressings, such as are used for fractures and dislocated limbs. The preparation is thickly rubbed, while still warm and fluid, into gauze, this to be applied to the parts.—H.

Glycerites. (Glyceroles—Glycerins—Glycerates—Glycerin Solutions or Mixtures.)

The glycerites ("glycerins" is the appellation of the British Pharmacopeia) are preparations made by the use of glycerin. Some of them are solutions, some are mixtures, and others are extractive preparations. Glycerin has wide range as a solvent and is an effective preservative, hence its use in pharmaceutical preparations.

Glycerite of Aloes.

Socotrine aloes, fine powder	gr. 270
Glycerin	av.oz. 5

Triturate in a glass or porcelain mortar, transfer to a wide-mouth bottle, and if the aloes is not dissolved, heat the mixture on a water bath for 15 minutes, and strain.—Eclectic.

Glycerite of Alum.

Alum, powder	gr. 300
Distilled water	fl.dr. 2
Glycerin, to make.....	fl.oz. 4

Triturate all together until solution is effected, warming slightly if necessary, set aside, and decant the clear fluid from any deposited matter.—Brit. Pharm.

The Eclectic preparation is made from 1 av. ounce of alum, 5 fluidounces of glycerin, stirring together in a porcelain vessel, heating gently until the alum is dissolved, setting aside, and decanting the clear liquid from any particles that may have subsided.

Glycerite of Arnica. (Glycerole of Arnica.)

Fluid extract of arnica flowers	fl.oz. 2
Glycerin	fl.oz. 16

Mix, then heat on a water bath to expel the alcohol.

Glycerite of Atropine.

Atropine	gr. 4
Glycerin	gr. 480

Triturate together thoroughly.—Eclectic.

Glycerin of Belladonna.

Extract of belladonna, green, Brit. Pharm.....	av.oz. 1
Distilled water, boiling.....	fl.dr. 1
Glycerin, to make.....	fl.oz. 2

Triturate the extract with the water to a smooth paste, and add the glycerin.—Brit. Form.

Glycerite of Bismuth.

I.

Bismuth subnitrate	gr. 1200
Nitric acid, pure, (U. S. P. strength or 68 p. c.)....	fl.oz. 2½
Tartaric acid, powder.....	gr. 1800
Sodium bicarbonate, pure..	gr. 2040
Glycerin	fl.oz. 8
Distilled water	sufficient

Dissolve the bismuth salt in the acid previously diluted with 5 fluidounces of water; to the solution, slowly add 10 fluidounces of water. Now add 900 grains of tartaric acid, and then 1020 grains of sodium bicarbonate. Dilute the magma of bismuth tartrate with 16 fluidounces of distilled water, set the mixture aside for 5 or 6 hours, decant the clear supernatant liquid and wash the residue magma with repeated portions of distilled water, in the same manner, until all the nitric acid has been removed; drain the precipitate on a paper filter. Mix 1020 grains of sodium bicarbonate with 5 fluidounces of water and gradually add 900 grains of tartaric acid, warming slightly to obtain a perfect solution. Transfer the moist precipitate of bismuth tartrate to this solution, and stir until it is dissolved; filter the solution, add the glycerin, and evaporate the liquid on a water bath or dilute it with water as may be necessary, to make 16 fluidounces of liquid.—N. F.

Each fluidram of this solution contains about 16 grains of bismuth and sodium tartrate with an excess of sodium tartrate.

This preparation can be mixed with slightly acid liquids without precipitation of the bismuth. It is suitable for making elixir of bismuth and pepsin or any other preparation containing bismuth in a soluble form.

II.

Bismuth subnitrateav.oz. 1
Glycerinav.oz. 3
Triturate together until well mixed.

This is of course a much different preparation from the foregoing. The No. I. only should be employed in preparations calling for glycerite of bismuth.—Eclectic.

Glycerite of Borax.

Borax, powderav.oz. 4
Glycerinfl.oz. 14½
Or use 4½ av. ounces of borax and 16 fluidounces of glycerin.

Triturate together until dissolved, or

else warm gently, stirring constantly until dissolved.—U. S. P. 1870.

The Eclectic formula (old dispensatory) is practically like this. The new King's Dispensatory directs 480 grains of borax and 8 fluidounces of glycerin.

The formula of the Brit. Pharm. directs 2½ av. ounces of borax and 14½ fluidounces of glycerin, or 2¾ of borax and 16 of glycerin.

Glycerite of Boric and Tannic Acids.

Boric acidav.oz. ½
Tannic acidav.oz. 1
Glycerinav.oz. 10

Mix the acids with the glycerin, heat on a water bath until dissolved, and strain.

Glycerite of Boroglycerin. (Glycerite of Glyceryl Borate—Solution of Boroglyceride—Glycerite of Boric Acid.)

Boric acid, fine powder....av.oz. 6¼
Glycerin, to makeav.oz. 20

Heat 9¼ av. ounces of glycerin, in a tared porcelain capsule, to a temperature not exceeding 150 deg. C. and add the acid in portions, stirring constantly. When all is added and dissolved, continue the heat at the same temperature, frequently stirring, and breaking up the film which forms on the surface. When the mixture has been reduced to the weight of 10 av. ounces, add to it 10 av. ounces of glycerin, mix thoroughly, and transfer it to suitable vessels.—N. F. (1st Ed.), U. S. P. and Brit. Pharm.

The above amount, 20 av. ounces, measures nearly 16 fluidounces.

This preparation may also be made from boroglycerin as described under the latter, which see.

The glycerite of boric acid of the Brit. Pharm. is made exactly like the above but uses only 6 av. ounces of acid which is heated with 9, instead of 9¼, av. ounces of glycerin.

Glycerite of Carbolic Acid. (Glycerite of Phenol—Glycerinum Carbolicum.)

Carbolic acid, liquefied.....fl.oz. 2
Glycerinfl.oz. 8

Add the acid to the glycerin and mix thoroughly.—U. S. P.

The Brit. Pharm. makes this preparation from $3\frac{1}{4}$ av. ounces of crystal acid and enough glycerin to make 16 fluidounces and is therefore of about the same strength as that of the U. S. P.

The Eclectic formula is practically the same as that of the Brit. Pharm., or, in other words, like that of the U. S. P. 1870.

Glycerite of Chloroform.

Chloroformm. 75
Glycerinfl.oz. 4

Agitate thoroughly in a bottle.—Eclectic.

Glycerite of Gallic Acid. (Glycerinum Gallicum.)

Gallic acidav.oz. 1
Glycerinav.oz. 16

Triturate thoroughly the acid with the glycerin, avoiding contact with metal. Solution may be facilitated by applying gentle heat.—Eclectic.

The new King's Dispensatory directs 480 grains of gallic acid and 4 fluidounces of glycerin. Triturate the acid in a mortar, gradually incorporate the glycerin until a uniform mixture is produced, transfer to a porcelain vessel and heat gently on a water bath until solution is effected, stirring constantly meanwhile. The temperature of solution should not exceed 100 deg. C. (212 deg. F.) lest poisonous pyrogallol be formed.

The Brit. Pharm. 1885 (not recognized in present Brit. Pharm.) directed 4 av.ounces of acid and 16 fluidounces of glycerin.

Glycerite Guaiac.

Guaiac resin, powder.....gr. 640
Solut'n of potassa (U.S.P.) fl.oz. 1
Glycerinfl.oz. 10
Water, to make.....fl.oz. 16

Mix the solution of potassa with 5 fluidounces of water, add the powdered guaiac, and macerate for 24 hours with occasional agitation. Then filter, add the glycerin and sufficient water, if necessary, to make 16 fluidounces.—N. F.

Glycerite of Hydrastis. (Glycerite of Golden Seal.)

Hydrastis, No. 60 powder.av.oz. 16 $\frac{3}{4}$
Glycerinfl.oz. 8
Alcohol, water, each.....sufficient

Moisten the drug with 6 fluidounces of alcohol, and pack it firmly in a cylindrical percolator; then add enough alcohol to saturate the powder and leave a stratum above it. When the liquid begins to drop from the percolator, close the lower orifice, and having closely covered the percolator, macerate for 48 hours. Then allow percolation to proceed, gradually adding alcohol until the drug is practically exhausted.

From the percolate remove nearly all the alcohol by distillation or evaporation, pour the thick concentrated liquid into 8 fluidounces of ice-cold water, and set aside in a cold place for 24 hours. Then filter, pass enough cold water through the filter to make the filtrate measure 8 fluidounces, add the glycerin, and mix thoroughly.—U. S. P.

This preparation is of the same drug strength as fluid extracts. It mixes clear with water in all proportions.

Glycerite of Hypophosphites.

Calcium hypophosphite.....gr. 300
Sodium hypophosphite.....gr. 100
Potassium hypophosphite....gr. 100
Spirit of bitter almond....fl.dr. 2
Sugarav.oz. 4
Distilled water, hot.....fl.oz. 6
Glycerin, to make.....fl.oz. 16

Dissolve the hypophosphites in the hot water, filter, dissolve the sugar in the filtrate, strain if necessary, and add the spirit and glycerin.—Parrish.

Glycerite of Iodin, Comp. (Glycerole of Iodin.)

Iodingr. 60
Potassium iodidgr. 60
Glyceringr. 240

Thoroughly triturate the potassium iodid with the glycerin, then gradually add the iodine, and stir until it is dissolved.—Eclectic.

Glycerite of Iron Chlorid.

Solution of iron (ferric)
chloridfl.dr. 4
Citric acidgr. 80

Glycerinfl.oz. 13
 Ammonia watersufficient
 Distilled water, to make....fl.oz. 16
 Mix the solution with the glycerin,

dissolve the acid in 1 fluidounce of water, mix the two liquids, and then add ammonia water, gradually, with constant stirring, until the liquid is but feebly acid. This latter will require about 1 fluidounce. Then dilute with water to 16 fluidounces.

If twice as much acid be employed, the liquid will be greenish instead of brown.

Each fluidounce of glycerite is equivalent to 1 fluidram of tincture of ferric chloride.

Glycerite of Kino.

Kino, powdergr. 240
 Glycerinfl.oz. 2
 Triturate together thoroughly.—Ecclectic.

Glycerite of Lead Subacetate.

Lead acetate, pure.....av.oz. 4
 Lead oxid, powder.....av.oz. 23/4
 Glycerinfl.oz. 15 1/2
 Distilled waterfl.oz. 9 1/4

Mix all, boil together for 15 minutes, filter, and evaporate at a temperature not exceeding 105 deg. C. until the product weighs 25 av.ounces (about 17 fluidounces) and has a sp. gr. of 1.48.

—Brit. Pharm.

This is of about the same strength of the solution of lead subacetate U. S. P., and may be employed in making the diluted solution of lead subacetate.

The above is a clear liquid which is miscible in all proportions with distilled water, yielding clear mixtures. It is less liable to produce turbidity when mixed with aqueous liquids than is the solution of lead subacetate.

Glycerite of Licorice.

An excellent substitute for pure extract and fluid extract of licorice for making elixirs, syrups, etc., may be prepared as follows from the commercial mass or stick extract of licorice:

Extract of licorice, mass or stickav.oz. 13
 Glycerinav.oz. 8
 Watersufficient

Macerate the extract in about 4 to 6 pints of water until it is thoroughly dissolved, stirring frequently, and then filter. The amount of water used must be enough to make the liquid thin enough to filter. To prevent spoiling during the maceration, add a few drops of formaldehyde. After filtering, evaporate on a water bath in a tared vessel, to about 10 av.ounces, then add the glycerin, and if necessary enough water to make 16 fluidounces, rinsing the dish with this water.

The product is sufficiently thin to mix readily with water, syrup, elixir, etc., the mixture depositing little or no sediment. It does not decompose on keeping.

The commercial mass and stick extract usually contains about 40 per cent. of insoluble matter, so that the above product is approximately one-half as strong as the U. S. P. pure extract, three-fourths as strong as the commercial mass or stick, and 2 1/2 times as strong as the fluid extract. If the mass or stick used in making it contain more or less insoluble matter than 40 per cent., the product should measure proportionately less or more.

Glycerite of Ox-Gall.

Inspissated ox-gallav.oz. 3
 Glycerinfl.oz. 2
 Salicylic acidgr. 15
 Water, to make.....fl.oz. 6

Used chiefly in rectal injections, in quantities of 1/2 to 2 fluidounces, mixed with soap suds.—New York Hospitals.

Glycerite of Pepsin.

Pepsin, pure (1:3000).....gr. 640
 Hydrochloric acid (U. S. P.)..m. 75
 Purified talcumgr. 120
 Glycerinfl.oz. 8
 Water, to make.....fl.oz. 16

Mix the pepsin with 7 fluidounces of water and the hydrochloric acid, and agitate until solution has been effected. Then incorporate the talcum with the liquid, filter, returning the first portions of the filtrate until it runs through clear, and pass enough water through the filter to make the filtrate measure 8 fluid-

ounces. To this add the glycerin, and mix.

Each fluidram represents 5 grains of pepsin (U. S. P. or 1:3000).

For filtering the aqueous solution of pepsin first obtained by the above formula, as well as for filtering other liquids of a viscid character, a filter paper of loose texture (preferably that known as "textile filtering paper"), or a layer of absorbent cotton placed in a funnel or percolator, should be employed.—N. F.

A glycerite of pepsin may be made without acid by dissolving the pepsin in scales in a mixture of the glycerin with about 7½ fluidounces of water.

The formula of the Brit. Pharm. is practically like that of the N. F., viz., 666 gr. of pepsin, 90 m. of hydrochloric acid, 9½ fluidounces of glycerin, and water enough to make 16 fluidounces. The Brit. Pharm. pepsin should be capable of dissolving 2,500 times its weight of coagulated egg albumen.

Glycerite of Pepsin, Comp. (Glycerite of Pepsin and Wafer Ash.)

Oleoresin of wafer ash.....	gr. 120
Pepsin, scale	gr. 64
Glycerin	fl.oz. 16

—Eclectic modified.

King's Dispensatory gives the above formula with 256 grains of "dry" pepsin, but does not describe what is meant by this term. Inasmuch as the scale pepsins of the present-day market are of such excellent quality, the above modified formula should be satisfactory.

Glycerite of Phosphates of Iron, Quinine and Strychnine.

Iron phosphate, scale.....	gr. 290
Quinine, alkaloid	gr. 380
Strychnine, alkaloid	gr. 3
Phosphoric acid, 85 p. c.....	fl.dr. 13
Glycerin	fl.oz. 4
Distilled water, to make.....	fl.oz. 8

Heat the iron salt with 1½ fluidounces of distilled water in a porcelain dish at a temperature not exceeding 70 deg. C. until dissolved, then add the acid, quinine and strychnine, and enough distilled water to make 4 fluidounces, and stir until solution is effected. Mix this

with the glycerin and filter if necessary.—U. S. P.

This preparation is used to make syrup of phosphates of iron, quinine and strychnine.

Glycerite of Potassium Bromid.

Potassium bromid	gr. 60
Glycerin	gr. 300

Triturate together thoroughly.—Eclectic.

Glycerite of Potassium Chlorate. (Glycerin Solution of Chlorate of Potassium.)

Potassium chlorate, powder.....	gr. 60
Glycerin	gr. 600

Place together in a bottle and agitate.—Eclectic.

Glycerite of Quinine Sulfate. (Glycerite of Quinine.)

Quinine sulfate	gr. 24
Glycerin	fl.oz. 2

Triturate together until the quinine is dissolved.—Eclectic.

Glycerite of Quinine Sulfate with Strychnine. (Glycerate of Quinine and Strychnine.)

Strychnine	gr. 1
Quinine sulfate	gr. 40
Glycerin	fl.oz. 4

Triturate together.—Eclectic.

It is preferable, however, to use strychnine sulfate or some other soluble salt of strychnine instead of the alkaloid.

Glycerite of Rhatany.

Fluid extract of rhatany.....	av.oz. 3
Glycerin	av.oz. 1
Water	av.oz. 1

Mix, evaporate the alcohol at the temperature of the water bath, and add water to the residue to make it weigh 3 av.ounces.

This is used when the presence of alcohol is considered objectionable.—Eclectic.

Glycerite of Salicylic Acid.

Salicylic acid (from natural wintergreen oil)	gr. 60
Borax, fine powder.....	gr. 60
Glycerin	fl.oz. 2

Triturate the acid with the borax until well mixed, then add the glycerin.

and rub until a clear solution is obtained.—Eclectic.

Glycerite of Silver Nitrate.

Silver nitrate, crystal.....gr. 80

Glycerinfl.oz. 1

Weaker preparations may be made by diluting this with glycerin or distilled water.—Eclectic.

Glycerite of Sodium Sulfite.

Sodium sulfitegr. 120

Glycerinfl.oz. 3

Triturate thoroughly together and transfer to a bottle.—Eclectic.

Glycerite of Starch. (Glycerin Ointment — Plasma — Glycamyl — Glyceritum Amyli.)

Corn starchav.oz. 2

Waterfl.oz. 2

Glycerinfl.oz. 12¼ or av.oz. 16

To the starch contained in a porcelain capsule add the water and glycerin, and stir until a homogeneous mixture is produced. Then apply heat gradually raised to 140 deg. C. and not exceeding 144 deg. C., stirring constantly, until a translucent jelly is formed. Transfer the product to suitable vessels provided with well-fitting covers.—U. S. P.

It is advisable to rub the starch to a smooth mixture with the water before adding glycerin.

The addition of 1 to 2 grains of powdered tragacanth will prevent the separation, on standing, of the starch from the glycerin.

The preparation of the Brit. Pharm. is of the same strength as the above.

II. The corresponding preparation of the 3rd Germ. Pharm., called Unguentum Glycerini, was prepared as follows:

Wheat starchav.oz. 1

Tragacanth. fine powder.....gr. 90

Alcoholfl.dr. 5

Waterfl.oz. 1½

Glycerinav.oz. 10

Triturate the starch to a smooth paste with the water, add the glycerin, then incorporate the tragacanth previously triturated to a smooth paste with the alcohol, and heat the whole with almost constant stirring until the alcohol has dissipated and a translucent jelly is produced.

The preparation of the last (4th) Germ. Pharm. is somewhat different, as follows:

Wheat starchav.oz. 1

Waterfl.oz. 1½

Glycerinav.oz. 10

Triturate the starch with the water to a smooth paste, incorporate the glycerin and heat the whole on a water bath with constant stirring until a translucent jelly is obtained.

Glycerite of Tannic Acid. (Glycerite of Tannin.)

Tannic acidav.oz. 4

Glycerinav.oz. 16

Triturate the acid with the glycerin to a smooth paste, transfer this to a porcelain dish, avoiding contact with metallic utensils, and apply the heat of a water bath until the acid is completely dissolved. Then transfer the solution to a bottle.—U. S. P.

It is usually advisable to strain the solution, while still warm, through a piece of flannel or a pledget of cotton.

Glycerite of Tar.

Pine tarav.oz. 1

Magnesium carbonate.....av.oz. 2

Glycerinfl.oz. 4

Alcoholfl.oz. 2

Water, to make.....fl.oz. 16

Upon the tar, contained in a mortar, pour 3 fluidounces of cold water, stir them thoroughly together, and pour off the water. Repeat this once or twice, until the water only feebly reddens blue litmus-paper. Now triturate the washed tar with the alcohol, gradually incorporate the magnesium carbonate and glycerin, and lastly, 10 fluidounces of water. Pour the mixture upon a filter of loose texture spread over a piece of straining muslin, and, after the liquid portion has passed through, wash the residue on the filter with water, until the whole filtrate measures 16 fluidounces.—N. F. and U. S. P. 1870.

Regarding filters of loose texture, see Glycerite of Pepsin.

An Eclectic preparation of the same name for external use is made by triturating one part by weight of tar with 8

parts by weight of glycerite of starch to a smooth paste. It is advisable to warm the glycerite of starch previous to the mixing.

Glycerite of Tragacanth.

Tragacanth, pure, fine powder	av.oz. 2
Glycerin	fl.oz. 12
Water	fl.oz. 3

Triturate the tragacanth with the glycerin in a mortar, add the water, and continue the trituration, until a homogeneous, thick paste results.—N. F.

The preparation of the Brit. Pharm. is prepared by mixing $4\frac{1}{4}$ av.ounces of tragacanth with 12 fluidounces of glycerin in a mortar, adding 4 fluidounces of water, and triturating until a homogeneous paste is formed.

Glycerite of Veratrine.

Veratrine (alkaloid)	gr. 3
Glycerin	gr. 297
Alcohol	sufficient

Dissolve the alkaloid in a small quantity of alcohol by triturating in a warm mortar, then gradually add the glycerin, and continue trituration in the warm mortar until the alcohol has evaporated.—Eclectic.

Glycerite of Yolk of Egg. (Glyconin Glyceritum Vitelli.)

Yolk of egg, fresh	av.oz. 9
Glycerin	av.oz. 11

Or use equal parts by measure.

Rub the yolk of egg in a mortar with the glycerin, gradually added, until they are well mixed.—N. F. Appendix and U. S. P. 1890.

Glycerogelatins.

Glycerogelatins are soft masses, melting at the body temperature, composed of glycerin, gelatin, water and a medicament suitable for external application in dermatological practice, such as salicylic acid, iodoform, ichthyol, resorcin, chrysarobin, etc., either by themselves or with the addition of zinc oxid. They were originally suggested by Dr. Unna. The formulas given below serve as types. The added solid substance must be in very fine powder.—N. F.

Glycerogelatin, Iodoform, 10 per cent.

Glycerinated gelatin, U.S.P.	parts 2
Glycerin	parts 3
Distilled water	parts 13
Iodoform, very fine powder	parts 2

Melt glycerinated gelatin on a water bath, at a gentle heat, add 10 parts of water and, continuing the heat, a previously prepared mixture of the iodoform, the glycerin and the remainder of the water. Mix well and immediately pour the mixture into chilled molds or other suitable containers.—N. F.

Glycerogelatin, Salicylic Acid, 10 per cent.

Glycerinated gelatin, U.S.P.	parts 4
Glycerin	parts 7
Distilled water	parts 7
Salicylic acid, very fine powder	parts 2

Triturate the acid with the glycerin and water, add the mixture to the previously melted glycerinated gelatin, continuing the gentle heat of a water bath and stirring until a homogeneous mixture is effected. Then pour it into chilled molds or other suitable containers.—N. F.

Glycerogelatin, Zinc, Firm.

Glycerinated gelatin, U.S.P.	parts 6
Glycerin	parts 5
Distilled water	parts 7
Zinc oxid	parts 2

Melt the glycerinated gelatin on a water bath, at a gentle heat, add 2 parts of glycerin and the water, and, continuing the heat, the zinc oxid, previously finely levigated with the remainder of the glycerin. Mix thoroughly, and pour the mixture into chilled molds or other suitable containers.—N. F.

Glycerogelatin, Zinc, Soft.

Prepare like the preceding, but decreasing the glycerinated gelatin to 4 parts and increasing the glycerin to 7 parts.—N. F.

Granules. Granula—Körner.

The German Pharmacopœia gives a general formula for preparations of this name as follows:

Triturate the substance, either as it is or in solution in ether, alcohol or water

with a suitable quantity of a powdery mixture composed of 4 parts of milk sugar and 1 part of acacia until intimately mixed, make a mass with simple syrup containing 10 per cent. of glycerin, and divide into the required number of granules which are to be of spherical form.

Each dry granule is to weigh 1/20 gram (3/4 grain).

Greases.

Greases or fats, more properly termed lards, may be found under the latter designation.

Honeys. (Mellita.)

The preparations known as honeys are a diminishing class, their place being taken by the glycerites and syrups. They are prepared either by dissolving or mixing medicinal agents with honey.

Honey, Clarified. (Mel Depuratum.)

I. Mix honey intimately with about 2 per cent. of its weight of paper pulp which has previously been reduced to shreds, thoroughly washed and soaked in water strongly expressed, and again shredded. Then apply the heat of a water bath, and, as long as any scum rises to the surface, carefully remove this (with a skimmer). Then add enough distilled water to make up the loss by evaporation, strain, and mix the strained liquid with 5 per cent. of its weight of glycerin.—U. S. P.

Filter paper should be used for making paper pulp for the above. The shredding or reducing to pulp may be facilitated after moistening by vigorously triturating in a large mortar.

II. The directions of the Brit. Pharm. for clarified honey are quite simple, viz.: Honey of commerce, melted in a water bath, and strained, while hot, through flannel previously moistened with warm water.

III.

Honeyav.oz. 16
Waterfl.oz. 23
Heat together on a water bath for one

hour, allow to cool to about 50 deg. C., strain through thick flannel, and evaporate on a water bath until the liquid has a sp. gr. of 1.33.—Germ. Pharm.

The honey used should be examined for acidity; 10 grams should require not more than 1/2 cc. normal, or 5 cc. decinormal, solution of potassium hydrate for neutralization.

Honey of Borax. (Borax Honey—Mel Boracis.)

I.

Borax, powderav.oz. 2
Clarified honeyav.oz. 16

Mix and dissolve by the aid of a gentle heat.—U. S. P. 1870.

II.

Borax, powderav.oz. 2
Glycerinav.oz. 1
Honeyav.oz. 16

Prepare like the preceding.—Brit. Pharm.

Honey of Rose. (Mel Rosæ—Mel Rosatum or Rosarum.)

I.

Fluid extract of rose.....fl.oz. 2 1/2
Honey, clarified, to make
the total weigh.....av.oz. 22

The product will measure approximately 16 fluidounces.—U. S. P.

II.

Red rose petals, cut.....av.oz. 2
Glycerinav.oz. 2
Waterfl.oz. 3
Alcoholfl.oz. 9
Clarified honeyav.oz. 18

Mix the petals with the alcohol and water, macerate for 24 hours in a well-closed vessel, agitate frequently, express, filter, add the glycerin and honey, and evaporate the whole to the weight of 20 av.ounces.—Germ. Pharm.

III.

Red rose petals.....av.oz. 2
Water, boilingfl.oz. 24
Glycerinfl.oz. 3
Honeyfl.oz. 12

Pour the water on the petals, let stand 24 hours, express, evaporate the colature to about 1 1/2 fluidounces, and to this add the glycerin and honey.—H. modified.

This is an excellent preparation and is very easily made.

IV.

Inspissated extract of rose.	av.oz.	½
Glycerinav.oz.	2
Clarified honeyav.oz.	17½

Dissolve the extract by the aid of a gentle heat in the honey, and add the glycerin.—D.

Honey of Rose with Borax. (Mel Boraxatum—Mel Rosatum of cum Borace.)

Boraxav.oz.	1
Honey of roseav.oz.	10

Mix and dissolve borax by aid of a gentle heat.

Either No. I, II, III or IV, honey of rose, may be used. A small amount of boric acid, about ½ av.ounce, may also be added to improve the preparation.

Hydrastin.

Extract golden seal, No. 60 powder, by the usual method of percolation, with a mixture of 2 volumes of alcohol with 1 of water, remove the alcohol from the percolate by distillation, evaporate the residue to dryness, and reduce to fine powder.—Brit. Form.

Keep in a well-closed vessel.

Hydromel.

Honeyfl.oz.	1
Waterfl.oz.	9

Hypodermic Injections.

See Injections, Hypodermic.

Ichthyol, Deodorization and Disguising Taste of.

For external use, ichthyol, 50, and 1 each of oil of citronella and eucalyptus; or ichthyol, 9, and oil of turpentine, 1.

For internal use, ichthyol, 5 to 8, peppermint water, 80, and simple syrup, 20; or, ichthyol, 30 to 60, oil of peppermint, 1, absolute alcohol, 10, and distilled water, 1000.

Infusions. (Infusa.)

According to the U. S. P., any ordinary infusion, the strength of which is not directed by the physician nor specified by the pharmacopeia, shall be prepared by the following formula:

The drug, coarse powder	...gr.	365
Water, boilingfl.oz.	16
Water, to makefl.oz.	16

Put the drug into a suitable vessel provided with a cover, pour upon it the boiling water, cover the vessel lightly, and let it stand for ½ hour in a warm place. Then strain (through muslin or flannel), and pass enough water through the strainer to make the colature measure 16 fluidounces.

It is advisable to express the substance on the strainer before adding more water.

The product represents 5 per cent. of drug.

Cautions.—The strength of infusions of powerful or energetic substances should be specially prescribed by the physician.

Infusions should be made in porcelain, porcelain-lined or glass vessels.

According to the German Pharmacopœia, infusions are to be made by pouring boiling water on the drug, then heating on a water bath for 5 minutes, stirring frequently, allowing to cool, and straining. When the strength of the infusion is not specified, it is to be made to represent 10 per cent. of drug.

Infusion of Broom. (Infusion of Scoparius.)

Broom tops, bruisedgr.	730
Distilled water, boiling	...fl.oz.	16

Infuse in a covered vessel for 15 minutes, and strain.—Brit. Pharm.

This has been introduced in place of the decoction of broom of the Brit. Pharm. of 1885 which was made from 365 gr. of broom tops and 16 fluidounces of water.

Infusion of Buchu. (Infusum Barosmæ or Diosmæ.)

I.

Buchugr.	480
Distilled water, boiling	...fl.oz.	16

Mix, let stand in a covered vessel for 2 hours, then strain.—U. S. P. 1870.

II.

Buchugr.	365
Distilled water, boiling	...fl.oz.	16

Infuse in a covered vessel for 15 minutes, and strain.—Brit. Pharm.

III. The Eclectic formula is the same as No. II.

Infusion of Cascarella.

Cascarella, No. 10 powder...gr. 365

Distilled water, boiling....fl.oz. 16

Infuse in a covered vessel for 15 minutes, and strain.—Brit. Pharm.

Infusion of Catechu. (Compound Infusion of Catechu, U. S. P. 1870.)

Catechu, fine powder.....gr. 240

Cinnamon, moderately fine

powdergr. 60

Water, boilingfl.oz. 16

Macerate in a covered vessel for an hour, and strain.—U. S. P. 1870.

Infusion of Chamomile.

Roman chamomilegr. 365

Water, boilingfl.oz. 16

Infuse in a closed vessel for ½ hour, then strain.—Brit. Pharm. 1885.

Infusion of Chiretta.

Chiretta, cut small.....gr. 365

Distilled water, boiling....fl.oz. 16

Infuse in a covered vessel for 15 minutes, and strain.—Brit. Pharm.

The Brit. Pharm. also recognizes a "concentrated solution of chiretta" which is 10 times the strength of the above. It is prepared by extracting 8¼ av.ounces of drug in No. 40 powder with a mixture of 4 volumes of alcohol and 15 of water to make 16 fluidounces of product. The infusion may be prepared by mixing this with 9 times its volume of water.

Infusion of Cinchona. (Acid Infusion of Cinchona.)

Yellow cinchona, No. 40

powderav.oz. 1

Aromatic sulfuric acid.....m. 80

Water, to make.....fl.oz. 16

Mix the acid with 8 fluidounces of water, and moisten the drug with 4 fluidrams of this mixture, pack it firmly in a conical glass percolator, and gradually pour upon, first, the remainder of the mixture, and afterwards water, until the infusion measures 16 fluidounces. N. F. Appendix and U. S. P. 1890.

The acid infusion of cinchona of the Brit. Pharm. is prepared by mixing 365 grains of red cinchona, in No. 40 powder, with 16 fluidounces of boiling dis-

tilled water, adding 90 m. of aromatic sulfuric acid (corresponding to 65 m. of U. S. P. aromatic sulfuric acid), infusing in a covered vessel for one hour, and straining.

Infusion of Cloves.

Cloves, bruisedgr. 180

Distilled water, boiling....fl.oz. 16

Infuse in a covered vessel for 15 minutes, and strain.—Brit. Pharm.

Infusion of Columbo. (Infusion of Calumba.)**I.**

Columbo, cut small.....av.oz. ½

Distilled water, cold.....fl.oz. 16

Macerate for two hours and strain, or extract by percolation with water.—U. S. P. 1870.

II.

Columbo, thinly sliced.....gr. 365

Distilled water, cold.....fl.oz. 16

Infuse for half an hour, and strain.—Brit. Pharm.

The Brit. Pharm. also recognizes a "concentrated solution of columbo" which is 10 times the strength of the above. It is prepared by macerating 8¼ av.ounces of drug in No. 5 powder with 8 fluidounces of distilled water for 24 hours, expressing strongly, again macerating the drug with 8 fluidounces of distilled water for 24 hours, and again expressing strongly. Mix the expressed liquids, heat for 5 minutes to 80 deg. C., allow to cool, add the alcohol, set aside for some time, then decant the clear liquid or filter, adding to the clear liquid enough distilled water to make 16 fluidounces.

The infusion may be prepared from this by mixing 1 volume with 9 volumes of water.

Infusion of Cusparia.

Cusparia bark, No. 20 powd..gr. 365

Distilled water, boiling....fl.oz. 16

Infuse in a covered vessel for 15 minutes, and strain.—Brit. Pharm.

The Brit. Pharm. also recognizes a "concentrated solution of cusparia"

which is 10 times the strength of the above and is prepared by extracting $8\frac{1}{4}$ av.ounces of drug in No. 40 powder with a mixture of 4 volumes of alcohol and 15 of water to make 16 fluidounces. The infusion may be prepared from this by adding to 1 volume of this 9 volumes of water.

Infusion of Digitalis.

Digitalis, bruised	av.oz. $\frac{1}{4}$
Alcohol	fl.dr. 13
Cinnamon water	fl.dr. 19
Water, boiling	fl.oz. 8
Water, cold, to make.....	fl.oz. 16

Upon the digitalis pour the boiling water, and allow it to macerate for one hour. Then strain, add the alcohol and cinnamon water to the colature, and pass enough cold water through the residue on the strainer to make the liquid measure 16 fluidounces.—U. S. P.

Infusion of digitalis of the Brit. Pharm. is prepared from 50 grains of digitalis, in No. 20 powder, and 16 fluidounces of boiling distilled water, infusing in a covered vessel for 15 minutes, and straining.

The Brit. Pharm. recognizes a "concentrated infusion of digitalis" made as follows:

Digitalis, No. 20 powder.....	gr. 400
Alcohol, 90 per cent.....	fl.oz. 4
Distilled water, to make.....	fl.oz. 16

Macerate the drug with 12 fluidounces of water for 24 hours, strain, and to 8 fluidounces of the colature add the alcohol. Again macerate the leaves with a second 12 fluidounces of the water for 6 hours, and strain; macerate with a third 12 fluidounces of water for 6 hours, and strain. Mix the residue of the first with the second and third liquids, evaporate at a low temperature to 4 fluidounces, add this to the portion set aside.

This preparation is 8 times the strength of the Brit. Pharm. infusion.

Infusion of Ergot.

Ergot, freshly crushed.....	gr. 365
Distilled water, boiling....	fl.oz. 16

Infuse in a covered vessel for 15 minutes, and strain.—Brit. Pharm.

Infusion of Gentian, Compound.

Gentian	gr. 240
Bitter orange peel.....	gr. 60
Coriander	gr. 60
Alcohol	fl.oz. 2
Water	sufficient

Extract the drugs in the form of moderately coarse powder, by percolation, using as a menstruum a mixture of the alcohol with 14 fluidounces of water, to be followed by water, until 16 fluidounces of percolate are obtained.—U. S. P. 1870.

The Brit. Pharm. directs 90 grains each of gentian root, thinly sliced, and dried bitter orange peel, cut small, and 180 gr. of fresh lemon peel, cut small, to be infused with 16 fluidounces of boiling distilled water in a covered vessel for 15 minutes, and strain.

See also Infusion of Gentian, Compound, Stronger.

Infusion of Gentian, Comp. Stronger.

Gentian	gr. 960
Coriander	gr. 240
Bitter orange peel.....	gr. 240
Diluted alcohol, to make.....	fl.oz. 16

Reduce the drugs to a moderately coarse (No. 40) powder, moisten it with diluted alcohol, pack it in a percolator, and percolate with diluted alcohol, until 16 fluidounces of percolate are obtained.

When compound infusion of gentian is prescribed, it may be prepared by mixing 1 volume of this preparation with 3 of water.—N. F.

II. The Brit. Form. recognizes a similar preparation under the name "concentrated compound infusion of gentian," as follows:

Gentian, No. 20 powder.....	gr. 800
Bitter orange peel, dried....	gr. 800
Lemon peel, dried.....	gr. 400
Tinct. of fresh lemon peel..	fl.dr. $6\frac{1}{2}$
Alcohol, 90 per cent.....	fl.oz. $3\frac{1}{4}$
Distilled water, to make....	fl.oz. 16

Mix the gentian and orange and lemon peels, pour over them 16 fluidounces of water, macerate 24 hours, and express. Reserve 8 fluidounces and to it add the tincture and alcohol. Treat the marc with two further macerations of 16 fluidounces of distilled water for 6

hours, express as before, mix the two liquids, adding any left over from the first maceration. Evaporate this liquid to 4 fluidounces, and add it to the reserved liquid to make 16 fluidounces.

This preparation is 8 times the strength of the Brit. Pharm. compound infusion of gentian.

The tincture of fresh lemon peel for this preparation is to be made by macerating 2 av.ounces of the grated outside peel of fresh lemons with 4 fluidounces of alcohol, and filtering.

Infusion of Geranium, Comp. (Compound Infusion of Cranesbill.)

Geranium	av.oz.	$\frac{3}{4}$
Witchhazel	av.oz.	$\frac{1}{4}$
Black cohosh	av.oz.	$\frac{3}{4}$
Golden seal	av.oz.	$\frac{3}{4}$
Water, boiling	fl.oz.	16

Bruise the drugs to coarse powder, pour on the water, and digest at a gentle heat, in a closed vessel, for 2 hours, then strain. If required, 30 grains of powdered alum may be added.—Eclectic.

This is used as an astringent wash in aphthous sore mouth and throat.

Infusion of Golden Seal, Compound.

Golden seal	av.oz.	$\frac{1}{2}$
Blue cohosh	av.oz.	$\frac{1}{2}$
Witchhazel bark	av.oz.	$\frac{1}{2}$
Alum	gr.	60
Water, boiling	fl.oz.	16
Honey	sufficient	

Digest the drugs in a closed vessel with the boiling water, at a gentle heat, for half an hour, strain, add the alum, dissolve, and then add sufficient honey to sweeten thoroughly.—Eclectic.

Used as wash for various forms of sore mouth, and as a gargle.

Infusion of Hops. (Infusum Lupuli.)

Hops, freshly broken.....	gr.	365
Distilled water, boiling....	fl.oz.	16

Infuse in a covered vessel for 15 minutes, and strain.—Brit. Pharm.

Infusion of Kouso. (Infusion of Brayera or Hagenia or Cusso.)

Kouso, No. 20 powder....	av.oz.	1
Boiling water	fl.oz.	16

Pour the boiling water upon the drug, and let it macerate in a covered vessel until cool.

This infusion should be dispensed without straining.—N. F. Appendix and U. S. P. 1880.

Infusion of Linseed. (Infusion of Flaxseed—Compound Infusion of Linseed, U. S. P. 1870.)

Linseed, whole	gr.	240
Licorice root, bruised.....	gr.	120
Water, boiling	fl.oz.	16

Macerate for 2 hours, then strain.—U. S. P. 1870.

Infusion of Orange Peel.

Bitter orange peel, dried, cut		
small	gr.	365
Distilled water, boiling....	fl.oz.	16

Infuse in a covered vessel for 15 minutes, and strain.—Brit. Pharm.

Infusion of Orange Peel, Compound.

Bitter orange peel, dried, cut		
small	gr.	180
Lemon peel, fresh, cut small..	gr.	90
Clove, bruised	gr.	45
Distilled water, boiling....	fl.oz.	16

Infuse in a covered vessel for 15 minutes, and strain.—Brit. Pharm.

Infusion of Parsley, Compound. (Infusum Apii Compositum.)

Parsley root, coarsely		
bruised	av.oz.	1
Parsley seed	av.oz.	1
Iron subcarbonate	av.oz.	1
Horseradish root, small		
pieces	av.oz.	$\frac{1}{2}$
Juniper berries, finely		
bruised	av.oz.	$\frac{1}{4}$
Squill, finely bruised.....	av.oz.	$\frac{1}{4}$
White mustard seed, finely		
bruised	av.oz.	$\frac{1}{4}$
Mandrake root, finely		
bruised	av.oz.	$\frac{1}{4}$
Queen-of-the-meadow, finely		
bruised	av.oz.	$\frac{1}{4}$
Cider	fl.oz.	48

Boil the cider, pour on the drugs contained in an earthen vessel, and digest at a gentle heat for 24 hours.—Eclectic.

The cider should not be too hard nor too new, but preferably pleasantly tart.

The above is used in some varieties of dropsy.

Infusion of Quassia.

Quassia, finely rasped.....gr. 73
 Distilled water, cold.....fl.oz. 16

Infuse in a covered vessel for 15 minutes, and strain.—Brit. Pharm.

The Brit. Pharm. also recognizes a "concentrated solution of quassia" which is 10 times the strength of the above and is prepared by extracting 730 grains of drug in No. 40 powder with a mixture of 4 volumes of alcohol and 15 of water to make 16 fluidounces. The infusion may be prepared by mixing 1 volume of this with 9 volumes of water.

Infusion of Rhatany. (Infusion of Krameria.)

Krameria, bruisedgr. 365
 Distilled water, boiling....fl.oz. 16

Infuse in a covered vessel for 15 minutes, and strain.—Brit. Pharm.

The Brit. Pharm. also recognizes a "concentrated solution of rhatany" which is 10 times the strength of the above and is prepared by extracting 8¼ av.ounces of drug in No. 40 powder with a mixture of 4 volumes of alcohol and 15 of water to make 16 fluidounces. The infusion may be prepared by mixing 1 volume of the above with 10 volumes of water.

Infusion of Rhubarb.

Rhubarb, thin slices.....gr. 365
 Distilled water, boiling....fl.oz. 16

Infuse in a covered vessel for 15 minutes, and strain.—Brit. Pharm.

The Brit. Pharm. also recognizes a "concentrated solution of rhubarb" which is 10 times the strength of the above and is prepared by extracting 8¼ av.ounces of drug in No. 40 powder with a mixture of 4 volumes of alcohol and 15 of water to make 16 fluidounces. The infusion may be prepared by mixing 1 volume of this with 9 volumes of water.

Infusion of Rose, Compound. (Acid Infusion of Roses.)

Red rose petals.....gr. 95
 Diluted sulfuric acid.....m. 70
 Sugargr. 300
 Boiling waterfl.oz. 16

Pour the boiling water upon the rose in a glass or porcelain vessel, add the acid, cover the vessel, and macerate for an hour. Then dissolve the sugar in the liquid and strain.—N. F. and U. S. P. 1870.

The acid infusion of roses of the Brit. Pharm. is made from 180 grains of dried red rose petals, adding to these a mixture of 90 m. of diluted sulfuric acid (equal to 65 m. of U. S. P. diluted sulfuric acid) and 16 fluidounces of boiling distilled water, infusing in covered vessel for 15 minutes, and straining.

Infusion of Sage.

Sagegr. 240
 Water, boilingfl.oz. 16

Mix, let stand in a covered vessel for half an hour, and strain.—U. S. P. 1870.

Infusion of Sage, Compound.

Sageav.oz. ½
 Hyssopav.oz. ½
 Boraxgr. 30
 Water, boilingfl.oz. 16

Digest the drugs, in a closed vessel, with the water, for half an hour, strain, and dissolve the borax in the colature.

Used as a mouth wash and gargle.—Eclectic.

Infusion of Senega.

Senega root, No. 10 powder.gr. 365
 Distilled water, boiling....fl.oz. 16

Infuse in a covered vessel for half an hour and strain.—Brit. Pharm.

The Brit. Pharm. also recognizes a "concentrated solution of senega" which is 10 times the strength of the above and is prepared by extracting 8¼ av.ounces of the drug in No. 20 powder with a mixture of 8 volumes of alcohol and 19 of water to make 16 fluidounces. The infusion may be prepared by mixing 1 volume of this with 9 volumes of water.

Infusion of Senna.

I.

Sennagr. 480
 Coriander, bruisedgr. 60
 Distilled water, boiling....fl.oz. 16

Infuse for an hour, and strain.—U. S. P. 1870.

II.

Sennagr. 730
Ginger, slicedgr. 45
Distilled water, boiling....fl.oz. 16

Infuse in a covered vessel for 15 minutes, and strain.—Brit. Pharm.

The Brit. Pharm. also recognizes a "concentrated solution of senna" which is 10 times the strength of the above and is prepared as follows:

Senna, No. 5 powder.....av.oz. 16¾
Tincture of ginger, U. S. P.fl.oz. 1
Alcoholfl.dr. 21
Distilled watersufficient

Divide the senna into three equal portions, slightly moisten one portion with distilled water, pack in a percolator, set aside for 24 hours, then pass distilled water through it until 4 fluidounces of percolate are obtained. Slightly moisten the second portion of drug with this percolate, set aside for 24 hours, and then pass the remainder of the percolate, adding to the drug an additional 4 fluidounces of distilled water. Treat the remaining portion of drug in the same manner, and continue successive percolation with water through the three portions of drug until a quantity of 12¾ fluidounces of percolate has been obtained from the third percolator. Heat the liquid to 80 deg. C. for 5 minutes, cool, add the tincture and alcohol, previously mixed, set aside for 7 days, and filter. The product should measure 16 fluidounces.

The infusion may be prepared by mixing 1 volume of this with 9 volumes of water.

Infusion of Senna, Compound. (Black Draught — Vienna Draught — Wiener Trank.)

I.

Senna, cutav.oz. 1
Mannaav.oz. 2
Magnesium sulfateav.oz. 2
Fennel, bruisedgr. 145
Water, boilingfl.oz. 12½
Water, cold, to make.....fl.oz. 16

Upon the senna and fennel pour the boiling water and macerate for half an hour. Then strain with expression, dissolve the salt and manna in the cola-

ture, again strain, and add enough water to the strainer containing the senna and fennel to make the liquid measure 16 fluidounces.—U. S. P.

II.

Senna (India), cut.....av.oz. 2
Rochelle saltav.oz. 2
Sodium carbonategr. 17
Mannaav.oz. 4
Alcoholfl.oz. 1
Watersufficient

Upon the senna pour 18 fluidounces of boiling water, heat the whole on a water bath for 5 minutes, allow to cool, strain with expression, in the colature dissolve the rochelle salt, sodium carbonate, and manna. Strain the liquid, add boiling water to the colature to make it weigh 19 av.ounces, add the alcohol, let the mixture stand for 24 hours, and decant the clear liquid (measuring about 16 fluidounces).—Germ. Pharm.

III. The "black draught" of the Brit. Pharm. is quite different from either of the preceding and is called compound mixture of senna. It is prepared as follows:

Magnesium sulfateav.oz. 4¼
Fluid extract of licorice....fl.dr. 6½
Compound tincture of cardamomfl.dr. 13
Aromatic spirit of ammoniafl.dr. 6½
Infusion of senna, Brit. Pharm., to make.....fl.oz. 16

Dissolve the magnesium sulfate in 8 fluidounces of the infusion, add the mixed fluid extract, tincture and spirit, and then add the remainder of the infusion.

Infusion of Serpentaria. (Infusion of Virginia Snakeroot.)

Serpentaria, No. 10 powder..gr. 365
Distilled water, boiling....fl.oz. 16

Infuse in a covered vessel for 15 minutes, and strain.—Brit. Pharm.

The Brit. Pharm. recognizes a "concentrated solution of serpentaria" which is 10 times the strength of the above and is prepared by extracting 8¼ av.ounces of drug in No. 40 powder with a mixture of 4 volumes of alcohol and 15 of water to make 16 fluidounces. The

infusion may be prepared by mixing one volume of this with 9 volumes of water.

Infusion of Tar. (Tar Water—Aqua Picis.)

Pine tarfl.oz. 4
Waterfl.oz. 16

Mix, shake frequently during 24 hours, decant the supernatant liquid, and filter.—U. S. P. 1870.

II. Formula for tar water:

Pine tarpart by weight 1
Pumice, coarse powder.....parts 3
Distilled watersufficient

Mix the tar and pumice, the latter having previously been washed with water and dried. To prepare the water, mix 4 av.ounces of this mixture with 9½ fluidounces of distilled water, agitate for 5 minutes, and filter.—Germ. Pharm.

This preparation should be freshly prepared when wanted for use or at least should not have been long on hand when it is dispensed.

Infusion of Trailing Arbutus, Compound. (Infusion of Epigæa Compositum—Diuretic Comp'd.)

Trailing arbutusav.oz. ¼
Queen-of-the-meadow root.....av.oz. ¼
Dwarf elder bark.....av.oz. ¼
Marshmallow rootav.oz. ¼
Water, boilingfl.oz. 8
Holland ginfl.oz. 8
Honeysufficient

Bruise the drugs to very coarse powder, pour on the water and gin, and digest at a gentle heat for 6 hours; then strain, and add enough honey to render the liquid pleasantly sweet.—Eclectic.

This is used in gravel and various disorders of the urinary organs.

Infusion of Uva Ursi. (Infusion of Bearberry.)

Uva ursi, bruised.....gr. 365
Distilled water, boiling...fl.oz. 16

Infuse in a covered vessel for 15 minutes, and strain.—Brit. Pharm.

Infusion of Valerian, Compound.

Valerian, cutav.oz. 1
Acetic etherm. 40
Syrup of cinnamon.....fl.oz. 1½
Water, hotsufficient

Make 7½ fluidounces of infusion from

the valerian and water, and, when cold, add the other ingredients.—H.

Infusion of Wild Cherry.

Wild cherry, No. 20 powder.gr. 290
Glycerinfl.dr. 6½
Water, to make.....fl.oz. 16

Moisten the powder with 1 fluidounce of water, macerate for 1 hour, pack firmly into a conical glass percolator, and, having placed the glycerin in the receiving vessel, gradually pour water on the drug until the percolate measures 16 fluidounces.—U. S. P.

Inhalations. (Vapors.)

Preparations by this name were recognized in the Brit. Pharm. of 1885, but not in the 1898 edition. These are hardly pharmaceutical in character and are usually to be prepared in the bedchamber, but this reference to them can hardly be considered out of place. The substance or mixture of substances is to be placed with water, cold or boiling, in a suitable apparatus, and the vapor arising is to be inhaled.

Inhalation of Chlorin. (Vapor of Chlorin.)

Chlorinated lime ("chlorid of lime")av.oz. 2
Water, coldsufficient

Put the powder into a suitable apparatus, moisten it with water, and let the vapor that arises be inhaled.—Brit. Pharm. 1885.

Inhalation of Conine. (Vapor of Conine.)

Juice of hemlock.....fl.dr. 4
Solution of potassam. 80
Distilled waterfl.oz. 1

Put 20 minims of this mixture on a sponge, in a suitable apparatus, so that the vapor of hot water passing over it may be inhaled.—Brit. Pharm. 1885.

The potassa liberates the volatile alkaloid conine from the hemlock juice.

Inhalation of Creosote.

Creosote, beechwoodm. 15
Water, boilingfl.oz. 10

Mix in an apparatus so arranged that air may be made to pass through the solution and may afterward be inhaled.—Brit. Pharm. 1885.

Inhalation of Fir-Wool Oil. (Inhalation of Oil of Wild Pine, Scotch Fir, or Pinus Sylvestris.)

Fir-wool oilm. 40
 Magnesium carbonate, light..gr. 20
 Water, to make.....fl.oz. 1

Triturate the oil with the magnesium carbonate and add the oil.

One fluidram of this is to be mixed with 10 fluidounces each of cold and boiling water in an apparatus so arranged that air may be made to pass through the solution and may afterwards be inhaled.—Brit. Pharm. 1885.

Inhalation of Hydrocyanic Acid.

Diluted hydrocyanic acid.m. 10 to 15
 Water, coldfl.dr. 1

Mix in a suitable apparatus and let the vapor that arises be inhaled.—Brit. Pharm. 1885.

Inhalation of Iodin.

Tinct. of iodine, Brit. Pharm..fl.dr. 1
 Water, boilingfl.oz. 1

Mix in a suitable apparatus which can be gently heated; let the vapor that arises be inhaled.—Brit. Pharm. 1885.

Inhalation, Iodin, Ethereal.

This has been advised:

Iodingr. 3
 Etherfl.dr. 2
 Carbolic acidfl.dr. 2
 Creosote or thymol.....gr. 60
 Alcoholfl.dr. 3

Ten minims of this are to be dropped on the respirator for dry inhalation.

This is similar to carbolized solution of iodine.

Inhalation, Warren's.

Thymolgr. 8
 Sodium borategr. 300
 Glycerinfl.oz. 1¼
 Camphor waterfl.oz. 2½
 Tar waterfl.oz. 7

To be used as an inhalation by means of an atomizer.

Injections, Hypodermic.

Preparations of this name are recognized by the Brit. Pharm. They are aqueous solutions of active substances, usually alkaloidal salts, intended for subcutaneous use. Distilled water only must be used, it is to be boiled and

cooled before use, the solution should be perfectly clear, and it should be made only as wanted for use. The Brit. Pharm. 1885 used camphor water as the solvent, instead of distilled water, in some instances.

Injection, Hypodermic, of Apomorphine.

Apomorphine hydrochlorid..gr. 1
 Diluted hydrochloric acid....m. 1
 Distilled waterm. 110

Boil the water for a few minutes, cool, add the acid, dissolve the alkaloidal salt in this liquid, and add, if necessary, enough recently boiled and cooled distilled water to make 110 m. of liquid.—Brit. Pharm.

In the Brit. Pharm. 1885 this was prepared from 2 gr. of the salt and 100 m. of camphor water.

Injection, Hypodermic, of Cocaine.

Cocaine hydrochlorid.....gr. 33
 Salicylic acidgr. ½
 Distilled waterfl.dr. 6

Boil the water, add the acid, dissolve the cocaine salt in the solution when cool, and add, if necessary, enough recently boiled and cooled distilled water to make 6 fluidrams of solution.

110 minims contain about 10 gr. of cocaine hydrochlorid.—Brit. Pharm.

Injection, Hypodermic, of Curare.

Curaregr. 5
 Distilled watersufficient

Reduce the curare to powder in such a way as to prevent it from coming in contact with the naked hand or any other portion of the body, add distilled water to form a thin paste, transfer to a small funnel plugged with absorbent cotton, and gradually pour upon it distilled water until 1 fluidram is obtained.

If the injection is required in haste, proceed in this manner:

To the 5 gr. of curare, reduced to powder, add 1 fluidram of distilled water, pour on a filter, and when the liquid ceases to drop, pour on the contents of the filter enough distilled water to make 1 fluidram of filtrate.—Brit. Form.

Injection, Hypodermic, of Ergot or Ergotin.

Extract of ergot.....gr. 100
 Phenol (pure carbolic acid).....gr. 3
 Distilled waterm. 220

Mix the phenol with the water, boil for a few minutes, cool, add the extract, dissolve, and then add enough recently boiled and cooled distilled water to make 330 minims of solution.—Brit. Pharm.

Injection of Lead and Opium.

Lead acetategr. 8
 Zinc sulfategr. 8
 Tincture of opium.....fl.dr. 2
 Water, to make.....fl.oz. 4

—New York Hospitals.

Injection, Hypodermic, of Morphine.

Morphine tartrategr. 5
 Distilled watersufficient

Dissolve the morphine salt in enough recently boiled and cooled distilled water to make 110 minims of solution.—Brit. Pharm.

The preparation of the Brit. Pharm. 1885 contained 11 gr. of morphine acetate to 110 m. of injection.

Injection, Urethral.

Boric acidgr. 60
 Zinc sulfategr. 8
 Alcoholfl.dr. 2
 Water, to make.....fl.oz. 4

—New York Hospitals.

Injection, Urethral, Lloyd's.

Zinc acetategr. 6
 Lead, acetategr. 6
 Glycerite of hydrastis.....fl.oz. 1½
 Water, to make.....fl.oz. 4

—New York Hospitals.

Iodoform, Aromatic or Deodorized.

Iodoformgr. 96
 Cumaringr. 4

Mix them intimately by trituration.

Should cumarin not be available, or should it be objectionable to the patient, the odor of iodoform may also be more or less masked by many essential oils, for instance those of peppermint, cloves, cinnamon, citronella, bergamot, sassafras, eucalyptus, etc. Another efficient covering agent is freshly-roasted and powdered coffee.

The odor of iodoform may be removed from the hands or any utensils

which it has come in contact with, by washing them with an aqueous solution of tannic acid or by rubbing with oil of turpentine.—N. F.

Iridin.

Extract blue flag, No. 60 powder, with a mixture of 2 volumes of alcohol and 1 of water by the usual method of percolation, remove the alcohol from the percolate by distillation, evaporate the residue to dryness, and reduce to fine powder.—Brit. Form.

Keep in a well-closed vessel.

Iron Ammonio-Chlorid. (Amoniated Iron.)

Ammonium chlorid, moderately coarse powder.....av.oz. 5
 Solution of ferric chlorid...fl.dr. 6

Mix the ammonium chlorid with the solution in a porcelain capsule, and heat on a water bath, stirring constantly, until dry.—Germ. Pharm. modified.

Keep protected from light.

Iron Ammonium Citrate.

See Iron (Ferric) Citrate.

Iron and Ammonium Tartrate. (Ammonio-Ferric Tartrate — Ammonio-Tartrate of Iron.)

Solution of iron (ferric) sulfatefl.oz. 4
 Tartaric acidgr. 530
 Distilled waterfl.oz. 8
 Ammonia water, 10 p. c., water, eachsufficient

To 4½ fluidounces of ammonia water, previously diluted with 10 fluidounces of cold water, add slowly with constant stirring, the iron solution previously diluted with 52 fluidounces of cold water. When the precipitate has subsided, draw off the clear, supernatant liquid by means of a siphon, then mix the precipitate intimately with 30 fluidounces of cold water, again draw off the clear liquid, and repeat the washing with water in the same manner until the decanted liquid gives no more than a slight cloudiness with barium chlorid solution. Then transfer the precipitate to a wet muslin strainer, allow it to drain, and express the water as completely as possible. Dissolve one-half the tartaric

acid in the distilled water, neutralize the solution exactly with ammonia water, then add the other half of the acid, and dissolve it by the application of a gentle heat. Now add the moist ferric hydrate, in successive portions, stirring constantly, and continue the heat, which should not exceed 60 deg. C. until the hydrate is dissolved. Filter the solution while hot, evaporate it in a porcelain vessel, at or below the above-mentioned temperature, to the consistence of syrup, and spread it on plates of glass, so that when dry the salt may be obtained in scales.—U. S. P. 1890.

Keep the product in well-stoppered bottles, protected from light.

Iron (Ferrous) Carbonate, Saccharated.

Ferrous sulfate, pure....av.oz. 2
Sodium bicarbonate, pure..
..... av.oz. 1. gr. 175
Sugar, fine powder, distilled
water, eachsufficient

Dissolve the ferrous salt in 8 fluidounces of distilled water and the sodium bicarbonate in 20 fluidounces of distilled water, at a temperature not above 50 deg. C., and filter the solutions separately. To the sodium salt, contained in a flask or bottle having the capacity of about 40 fluidounces (it might even be larger), add gradually the ferrous solution, and mix thoroughly during the addition by vigorously rotating the flask or bottle. Fill up the flask or bottle with boiling distilled water, cork it loosely, and set the mixture aside. When the precipitate has subsided, draw off the clear, supernatant liquid by means of a siphon and then fill the flask again with hot distilled water and shake it. Again draw off the clear liquid and repeat the washing with hot distilled water in the same manner until the decanted liquid gives merely a slight cloudiness with barium chlorid test solution. Finally drain the precipitate thoroughly on a muslin strainer, transfer it to a porcelain capsule containing $3\frac{1}{4}$ av.ounces of sugar, and mix inti-

mately. Evaporate the mixture to dryness on a water bath, reduce it to powder and mix intimately with it, if necessary, enough well-dried sugar to make the product weigh 4 av.ounces.

Keep the product in small, well-stoppered bottles.

The product should contain at least 15 per cent. of ferrous carbonate.—U. S. P.

The Brit. Pharm. precipitates the iron carbonate with ammonium carbonate instead of sodium bicarbonate.

Iron (Ferric) Citrate.

The U. S. P. recognizes two scale preparations of this kind, one being called "iron citrate" (or "ferric citrate"), the other "iron and ammonium citrate." The latter is also called "ammonio-ferric citrate," but is known commercially more frequently as "soluble citrate of iron," it being more quickly soluble than the former compound.

I. The first one is prepared by evaporating any convenient quantity of solution of iron citrate (which see) on a water bath, at a temperature not exceeding 60 deg. C., to the consistence of syrup, and spreading on plates of glass so that when dry the salt may be obtained in scales.

After spreading on plates of glass (porcelain is equally good), it should be kept at a temperature of about 35 deg. C. to facilitate the drying.

The product, which is in garnet-red scales, should be preserved in well-stoppered bottles protected from light.

II. Iron and ammonium citrate ("soluble citrate of iron"):

Solution of iron citrate....fl.oz. 5
Ammonia water (10 p. c.)..fl.oz. 2

Mix the solution with the water, evaporate the mixture by means of a water bath at a temperature not exceeding 60 deg. C. to the consistence of syrup and spread it on plates of glass so that when dry the salt may be obtained in scales.

The drying on the plates should be facilitated as in the preceding case.

The product, which is in garnet-red scales, should be preserved in well-stoppered bottles protected from light.

For making this preparation, some formulas recommend the addition to the solution of iron citrate, not of ammonia water, but a solution of ammonium citrate. This is the method of the Norwegian Pharmacopeia.

Iron (Ferric) Hydrate. (Ferric Hydroxide.)

Solution of iron (ferric) sulfatefl.oz. 4
Ammonia waterfl.oz. 5½
Watersufficient

To the ammonia water, previously diluted with 20 fluidounces of cold water, add gradually under constant and vigorous stirring the iron solution previously diluted with 40 fluidounces of cold water. As soon as the precipitate has subsided, draw off the clear liquid by means of a siphon, then mix the precipitate intimately with about 40 fluidounces of cold water, again draw off the clear liquid after subsidence of the precipitate, and repeat this operation until a portion of the decanted liquid gives not more than a slight cloudiness with barium chlorid test solution. Finally transfer the precipitate to a wet muslin strainer, and after it has drained mix it with sufficient cold water to make the mixture weigh 12 av.ounces:—U. S. P.

The ammonia water must be 10 p. c. in strength; if weaker, proportionately more of it must be used and less water, or if stronger, less may be used, and more water.

Iron (Ferric) Hydrate with Magnesia. (Arsenic Antidote.)

Solution of iron (ferric) sulfatefl.dr. 5
Light magnesium oxid.gr. 75
Watersufficient

Mix the solution with 2 fluidounces of distilled water and keep the liquid in a large, well-stoppered bottle. Rub the magnesia with cold water to a smooth and thin mixture, transfer this to a bottle capable of holding 16 fluidounces, and fill with water to about

three-fourths of its capacity. When the preparation is wanted for use, shake the magnesia mixture to a homogeneous, thin magma, gradually add it to the iron solution, and shake them together until a uniform, smooth mixture results.—U. S. P.

It is supposed that the two mixtures be kept on hand so as to be ready for immediate use in case of acute arsenical poisoning.

Iron (Ferric) Hypophosphite.

Iron and ammonium sulfate (U. S. P.), perfect crystalsav.oz. 3
Sodium hypophosphite.....av.oz. 2
Distilled watersufficient

Dissolve the iron and ammonium sulfate in 11 fluidounces, and the sodium hypophosphite in 3½ fluidounces of distilled water, and, if necessary, filter each solution. Then mix them, and stir thoroughly; after a short time transfer the mixture to a close linen or muslin strainer, and wash the precipitate with distilled water, until the washings run off tasteless. Transfer the strainer to a warm place and, when the contents are dry, preserve them for use.

Hypophosphite of iron (ferric) may also be prepared in the following manner:

Calcium hypophosphite....av.oz. 2
Solution of chlorid of iron (U. S. P.), distilled water, eachsufficient

Dissolve the calcium hypophosphite in 24 fluidounces of distilled water, and filter the solution. To this add solution of chlorid of iron, in small portions, stirring well each time and allowing the precipitate to subside before adding a fresh portion. Toward the end, remove a small quantity of the clear supernatant liquid, add to it some solution of chlorid of iron diluted with 10 times its volume of water, and observe whether any turbidity occurs either at once or after a few minutes. If it remains clear, the precipitation may be regarded as complete. Then transfer the mixture to a close linen or muslin strainer, and wash

the precipitate with distilled water, until the washings run off tasteless. Transfer the strainer to a warm place and, when the contents are dry, preserve them for use.

Hypophosphite of iron is rendered soluble in water by mixing it with about an equal weight of potassium citrate, or some other alkali citrate. Theoretically, 100 parts of iron and ammonium sulfate will yield 51.9 parts, and 100 parts of calcium hypophosphite will yield 85.3 parts of dry hypophosphite of iron (ferric).—N. F. (1st ed.).

Iron (Ferrous) Iodid, Saccharated.
(Saccharated Ferrous Iodid.)

Iron, in the form of fine, bright wire, and cut into small pieces (so-called "card-teeth" are excellent).gr. 210
Reduced irongr. 36
Iodinav.oz. 1. gr. 155
Distilled water, sugar of milk recently dried, each.sufficient

Mix the iron wire, iodine, and $1\frac{1}{2}$ fluidounces of distilled water in a flask of thin glass, shake the mixture occasionally until the reaction ceases and the solution has acquired a green color and lost the odor of iodine; then filter through a small, well-wetted filter into a porcelain capsule containing 3 av.ounces of milk sugar. Rinse the flask and iron wire with a small quantity of distilled water, pass the rinsings through the filter into the capsule, and evaporate on a water bath with frequent stirring until a dry mass results. Transfer this quickly to a heated iron mortar, reduce to powder, and mix it intimately with the reduced iron and enough milk sugar to make the final product weigh 8 av.ounces.

Transfer the product at once to small and perfectly dry, well-stoppered bottles, to be kept in a cool, dark place.

The product contains 20 p. c. of ferrous-iodide (twice as much as syrup of iron iodide). It is soluble in 7 parts of water.—N. F. Appendix and U. S. P. 1890.

Iron Oxid, Soluble or Saccharated.
(Eisen Zucker.)

Solution of iron chloride (U. S. P.) ...av.oz. 2 (about fl.dr. $11\frac{1}{2}$)
Sodium carbonate, pure, crystalav.oz. $2\frac{1}{4}$
Caustic soda, pure.....gr. 30
Water, sugar, each.....sufficient

Mix the iron solution with $13\frac{1}{2}$ fluidounces of water, and to this liquid add gradually, with constant stirring, the sodium carbonate dissolved in $13\frac{1}{2}$ fluidounces of water until no more precipitation occurs, being careful towards the end of the process to add but a little of the carbonate at a time, and to allow the precipitate to subside before adding more of the precipitant. Then allow the precipitate to subside, decant the mother-liquor, and wash the precipitate by repeated affusion and decantation of distilled water, until the washings when mixed with 5 volumes of distilled water no longer make an opalescent mixture with silver nitrate solution. Transfer the precipitate to a dampened piece of muslin, and express gently so as to remove most of the contained water. Then mix the precipitate in a porcelain capsule with $4\frac{1}{2}$ av.ounces of sugar and 30 gr. of pure caustic soda, the latter previously dissolved in 3 fluidrams of water, heat cautiously until the liquid is clear, and evaporate, with constant stirring, to dryness. Mix with enough sugar to make $8\frac{3}{4}$ av.ounces, mix well, reduce the whole to moderately fine powder.—Germ. Pharm.

Iron (Ferric) Phosphate, Soluble.

Iron citrateav.oz. 5
Sodium phosphate, uneffloresced (i. e., clear crystals)av.oz. $5\frac{1}{2}$
Distilled waterfl.oz. 10

Dissolve the iron salt in the distilled water by heating on a water bath. To this solution add the sodium phosphate and stir constantly until it is dissolved. Evaporate the solution on the water bath at a temperature not exceeding 60 deg. C., to the consistence of thick syrup and spread on plates of glass (or

porcelain) so that it may dry in scales.

The drying on the plates may be facilitated by the use of a temperature of about 35 deg. C.

The product should be preserved in dark amber-colored, well-stoppered bottles.—U. S. P. 1890.

This iron phosphate is not to be confounded with the blue phosphate of iron of the British Pharmacopeia and of the U. S. P. 1870, which is made by precipitation from ferrous sulfate and is bluish powder, nor with the white phosphate of iron made by precipitation from solution of ferric sulfate which is also a powder.

Iron and Potassium Tartrate. (Potassium-Ferric Tartrate—Tartarated Iron.)

Solution of iron (ferric) sulfate	fl.oz. 4
Potassium bitartrate	gr. 695
Distilled water	fl.oz. 12
Ammonia water, 10 p. c., water, each	sufficient

Precipitate the ferric hydrate from the iron solution with ammonia water, wash, drain, and express it as in making the tartrate of iron and ammonia (which see). Then mix the potassium salt with the distilled water in a porcelain vessel, heat the mixture on a water bath to a temperature not exceeding 60 deg. C. and gradually add the moist ferric hydrate, stirring constantly until it is dissolved. Filter the liquid while hot and let the filtrate stand in a dark, cool place for 24 hours. Then stir it well with a porcelain or glass spatula so that the precipitate which has formed may be thoroughly incorporated with the liquid. Now add very cautiously just enough ammonia water to dissolve the precipitate, evaporate the solution in a porcelain vessel, at or below the above-mentioned temperature, to the consistence of syrup, and spread it on plates of glass (or porcelain) so that when dry the salt may be obtained in scales.

The drying on glass or porcelain

plates may be facilitated by the use of a temperature of about 35 deg. C.

The product should be preserved in well-stoppered bottles, protected from light.—U. S. P. 1890.

Iron (Ferric) Pyrophosphate, Soluble.

Prepare like iron phosphate, soluble (which see), but using, instead of the sodium phosphate, 5 av. ounces of sodium pyrophosphate, also uneffloresced.—U. S. P. 1890.

In the U. S. P. 1870, this compound was made by first preparing precipitated ferric pyrophosphate, then dissolving this in a solution of ammonium citrate, and then evaporating and scaling as before.

This soluble iron phosphate is not to be confused with the white iron pyrophosphate, in powder, made by precipitation, which is also commercially available.

Iron and Quinine Citrate.

Iron citrate	av.oz. 7
Quinine (alkaloid), dried at 100 deg. C. to constant weight	av.oz. 1
Citric acid	av.oz. ¼
Distilled water	sufficient

Dissolve the iron citrate in 13 fluid-ounces of distilled water by heating on a water bath to a temperature not exceeding 60 deg. C. To this solution add the quinine and citric acid previously triturated with 2 fluidounces of distilled water, and stir constantly until the quinine and citric acid are dissolved. Lastly evaporate the solution on a water bath at a temperature not exceeding 60 deg. C. and spread it on plates of glass so that when dry the salt may be obtained in scales.

Plates of porcelain may be used as well as plates of glass for the final drying. This drying may be facilitated by a temperature of not to exceed 35 deg. C.—U. S. P. 1890.

The product contains at least 11½ p. c. of quinine. It should be preserved in well-stoppered bottles protected from light. The preparation of the Brit.

Pharm. contains about 15 p. c. of quinine.

The product is in transparent scales of a reddish brown color and slowly soluble in water. The commercial citrate of iron and quinine, however, is in greenish-yellow scales readily soluble, due to the addition of ammonia, and such a preparation is now recognized by the U. S. P. under the name soluble iron and quinine citrate (which see).

Iron and Quinine Citrate, Soluble.

This is the preparation sold commercially under the name "citrate of iron and quinine." It is prepared similarly to iron and quinine citrate (which see), quinine and citric acid being mixed with water and stirred into warm iron citrate solution until dissolved. Then add gradually with constant stirring 4 fluid-ounces, or a sufficient quantity of ammonia water (10 p. c.), so that after the addition of each portion of the latter, the precipitated quinine will be redissolved and the liquid acquire a greenish-yellow tint. Lastly evaporate the solution on a water bath at a temperature not exceeding 60 deg. C. to the consistence of syrup, and spread it on glass (or porcelain) plates to dry in scales.—U. S. P. 1890.

This drying on the plates should be facilitated by the use of a temperature of about 35 deg. C.

The product is in greenish-yellow scales containing at least 11½ p. c. of quinine. It should be preserved in well-stoppered bottles protected from light.

Iron, Quinine and Strychnine Citrate.

This may be prepared like iron and strychnine citrate (which see), but the strychnine and citric acid should be increased to 20 grains each, and to the mixed iron and strychnine solutions add a solution of 225 grains of quinine (alkaloid) and 60 gr. citric acid in 1 fluid-ounce of distilled water. Evaporate and scale the product like the other scale salts.

Iron and Strychnine Citrate.

Iron and ammonium citrate.	av.oz.	4
Strychnine (alkaloid)gr.	18
Citric acidgr.	18
Distilled waterfl.oz.	5

Dissolve the citrate in 4 fluidounces of the water, and the strychnine and citric acid together in 1 fluidounce of water. Mix the two solutions, evaporate the mixture by means of a water bath at a temperature not exceeding 60 deg. C. to the consistence of syrup, and spread on glass (or porcelain) plates to dry in scales.

The drying on the plates may be facilitated by the use of a temperature of 35 deg. C.

The product, which contains 1 p. c. of strychnine, should be preserved in well-stoppered bottles protected from light.—U. S. P. 1890.

Iron (Ferrous) Sulfate, Dried or Exsiccated.

Take any convenient quantity of pure ferrous sulfate, crystal, in coarse powder, allow the salt to effloresce at a temperature of about 40 deg. C. in dry air and then heat it in a porcelain dish on a water bath, constantly stirring, until for every 100 parts by weight of crystals used there shall be 64 to 65 parts by weight of dried salt. Lastly reduce the residue to fine powder and transfer at once to perfectly dry, well-stoppered bottles.—U. S. P.

3 grains of the dried salt are about equal in strength to 5 grains of the crystalline.

Iron (Ferrous) Sulfate, Granulated. (Precipitated Iron Sulfate, U. S. P. 1880.)

Ferrous sulfate, pure, crystalav.oz.	4
Diluted sulfuric acidm.	100
Alcoholfl.oz.	1
Distilled waterfl.oz.	4

Dissolve the iron salt in the distilled water, previously heated to boiling, add the diluted acid, and filter the solution while hot. Evaporate the solution immediately in a tared porcelain capsule

on a sand bath until it weighs 6 av.-ounces. Then cool it quickly, under constant stirring, transfer the product to a glass funnel stopped with a plug of absorbent cotton, and when it has drained thoroughly pour upon it the alcohol. When this also has drained, spread the crystalline powder on bibulous paper, dry it quickly in the sunlight or in a dry room at the ordinary temperature and transfer it at once to perfectly dry, well-stoppered bottles.—U. S. P.

This preparation has the same composition as the crystal salt.

According to the U. S. P. 1880, it was made by dissolving 6 av.ounces of pure ferrous sulfate in 10 fluidounces of distilled water previously mixed with 1 fluidram of sulfuric acid, filtering, allowing to cool, adding the filtrate to an equal volume of alcohol, setting aside for 24 hours, collecting the precipitate on a filter, washing it with alcohol, and drying it.

Jellies.

The form of jelly has been advised as a convenient and easy method of administering medicines, especially fixed oils, e. g., cod-liver and castor oils. The following general formula has been recommended by Prof. Parrish and W. C.

Bakes:

Oil	av.oz.	4
Honey or simple syrup..	av.oz.	2
Acacia, powder	av.oz.	1
Russian isinglass	gr.	150
Orange flower water.....	fl.oz.	2¾

Dissolve the isinglass in 2 fluidounces of the water by the aid of heat, replacing the water as it evaporates, triturate the other ingredients with the remainder of the water, in a warmed mortar, to a homogeneous paste, add the hot isinglass solution, stir the mixture as it cools, and set aside to gelatinize.

Other flavoring waters may be substituted for the orange flower water. In the case of cod-liver jelly, cherry-laurel or bitter almond water, somewhat diluted with plain water, may be used.

Hager uses this formula:

Oil	av.oz.	4
Gelatin, best	gr.	150
Aromatic tincture	m.	50
Simple syrup	fl.oz.	1½
Distilled water	fl.oz.	2

Dissolve the gelatin in the water by the aid of heat, restoring water lost by evaporation, add the syrup, then the oil and tincture.

Jelly, Castor Oil.

See under heading Jellies.

Jelly, Cod-Liver Oil.

See under heading Jellies.

Jelly, Currant.

See Paste, Currant.

Jelly, Zinc.

See Gelatin, Zinc.

Juice of Belladonna. (Succus Belladonnæ.)

Bruise the fresh leaves and young branches of *Atropa Belladonna*, press out the juice, to every 3 volumes, add one of alcohol, set aside for 7 days, and filter.—Brit. Pharm.

Juice of Broom. (Succus Scoparius.)

Bruise fresh broom tops, press out the juice, to every 3 volumes add one of alcohol, set aside for 7 days, and filter.—Brit. Pharm.

Juice, Calendula. (Succus Calendulæ.)

Bruise the entire fresh plant gathered while flowering, express the juice, add one-seventh its volume of alcohol, set aside for several days, and strain.

Juice of Conium. (Succus Conii.—Juice of Hemlock.)

Bruise the fresh leaves and young branches of *Conium maculatum*, press out the juice, to every 3 volumes add one of alcohol, set aside for 7 days, and filter.—Brit. Pharm.

Juice of Dandelion. (Succus Taraxaci.)

Bruise fresh dandelion root, press out the juice, to every 3 volumes add one of alcohol, set aside for 7 days, and filter.—Brit. Pharm.

Juice of Digitalis.

Bruise fresh digitalis leaves, express

the juice, to every 3 volumes add one volume of alcohol, set aside for 7 days, and filter.—Brit. Form.

Juice, Elder. (*Succus Sambuci In-spissatus*.—*Roob Sambuci*.—*Syrupus Sambuci*.—*Elder-Berry Syrup or Juice*.)

Take any desired quantity of freshly gathered elder berries, heat, with constant stirring, until they burst open, then strain through a hair sieve and express the residue; evaporate the juice to a rather thick extract, and add to this powdered sugar in the proportion of 1 part by weight to every 9 parts by weight of the extract.—Aust. Pharm.

All application of heat must be over a water bath.

Juice of Henbane. (*Succus Hyoscyami*.)

Bruise the fresh leaves, flowering tops and young branches of *Hyoscyamus niger*, press out the juice, to every 3 volumes add one of alcohol, set aside for 7 days, and filter.—Brit. Pharm.

Juice, Huckleberry. (*Succus Myrtilli Inspissatus*.)

Huckleberries, freshav.oz. 16
Waterfl.oz. 8
Sugarav.oz. 1½

Heat the berries in a porcelain or enameled iron evaporating dish, on a boiling water bath, for one hour, and express. Heat the residue for an hour with the water, express again, mix the two liquids, add the sugar and heat until dissolved. Strain through a fine cloth and then evaporate on a water bath to thick extract, stirring constantly meanwhile.

This is used sometimes, in domestic practice, in the treatment of the diarrhea of children.—D.

Juice, Juniper. (*Roob Juniperi*.—*Succus Juniperi Inspissatus*.—*Juniper-Berry Syrup*.—*Syrupus Juniperi*.)

Juniper berries, fresh,
bruisedav.oz. 8
Water, hotfl.oz. 31

Mix, stir frequently during 12 hours, express, and evaporate the liquid to a thin extract.—Germ. Pharm.

In the absence of fresh berries this preparation may be made from the ordinary dried berries, by the use of a larger proportion of water and a longer period of maceration.

Juice, Lemon, Artificial.

When lemon juice is not readily obtainable, the following may be employed instead:

Citric acidgr. 525
Distilled waterfl.oz. 14
Oil of lemondrops 10
Alcoholfl.oz. 1½

Dissolve the acid in the water and the oil in the alcohol, mix the two solutions and filter.—H.

Juice, Lime, and Pepsin.

I.

Glycerite of pepsin.....fl.oz. 8
Lime juicefl.oz. 12
Mix and filter if necessary. Each fluidram represents about 2 gr. of pepsin (1:3000).—N. F.

II.

Pepsin, puregr. 128
Waterfl.oz. 1
Lime juicefl.oz. 2
Simple elixir, to make.....fl.oz. 16
Mix, dissolve by agitation, and filter.

Jutes.

Medicated jute is used sometimes as a surgical dressing instead of medicated cotton. The so-called raw or unbleached jute as well as the bleached is used for making the medicated jute, but the bleached, being more absorbent, is preferred and is the only kind mentioned in the formulas here given. Bleached jute may be prepared from the unbleached in the same manner as absorbent cotton and gauze are made from the raw material.

In general jute is less absorbent than cotton, but the former possesses the advantage of being more porous and not packing together so closely.

Medicated jute is usually prepared similarly to medicated cotton and gauze; the material is saturated with the medicating liquid by kneading, subsequent expressing to a weight double that of the

original material, drying, and packing in boxes, packages, etc., like medicated cotton.

Jute, Carbolated.

I.

	5 p. c.	10 p. c.
Carbolic acid,		
crystal.....av.oz.	1¼	av.oz. 2½
Distilled water. fl.oz.	7	fl.oz. 6
Alcohol.....fl.oz.	10	fl.oz. 10
Bleached jute..av.oz.	16	av. oz. 16

Dissolve the acid in the alcohol and water, saturate the jute with this solution by kneading, express to a weight of 32 av.ounces, and dry in the air.—D.

II. Process of Muennich:

Carbolic acid crystal.....av.oz.	¾
Spermaceti.....av.oz.	1
Resin.....av.oz.	2
Alcohol, 95 p. c.....fl.oz.	15
Bleached jute.....av.oz.	10

Dissolve the acid, resin and spermaceti in the alcohol, impregnate the jute with all of this solution, slightly warmed, weight down in a warm place for several hours, and dry in the air.—D.

This makes a 7½ per cent. jute.

III. Rosenwasser's process:

Carbolic acid, crystal.....av.oz.	1
Paraffin.....av.oz.	1
Resin.....av.oz.	4
Bezin.....av.oz.	30
Jute.....av.oz.	10

Dissolve the acid, paraffin and resin in the benzin and saturate the jute with all of this solution if a 10 p. c. jute is wanted, or with half of it if a 5 p. c. jute is wanted.

This is a cheap process owing to the use of the cheap solvent.

Jute, Iodoform.

Iodoform.....av.oz.	1
Resin.....gr.	130
Castor oil.....gr.	130
Ether, stronger.....fl.oz.	9½
Alcohol.....fl.oz.	5½
Bleached jute.....av.oz.	10

Dissolve the iodoform, resin and oil in the mixed ether and alcohol, impregnate the jute with all of this liquid, and dry by exposure to the air, under exclusion of daylight.

This makes a 10 per cent. jute.—D.

Jute, Mercuric Chlorid. (Corrosive Sublimate or Sublimated Jute.)

Mercuric chlorid.....gr.	22
Sodium chlorid.....av.oz.	2
Glycerin.....av.oz.	1
Distilled water.....fl.oz.	11½
Bleached jute.....av.oz.	10

Dissolve the two chlorids in the water, add the glycerin, impregnate the jute with all of this liquid, and dry at a temperature of 25 to 30 deg. C.—D.

This makes a ½ per cent. jute. A 1 in 1000 jute may be prepared from 4½ gr. of mercuric chlorid, 175 gr. of sodium chlorid, 1 av. ounce of glycerin, 12 fluidounces of water and 10 av. ounces of jute.

Jute, Salicylated.

	5 p.c.	10 p.c.
Salicylic acid...av.oz.	1¼	av.oz. 2½
Castor oil.....av.oz.	½	av.oz. 1
Alcohol.....fl.oz.	26½	fl.oz. 24½
Bleached jute..av.oz.	16	av.oz. 16

Dissolve the acid and oil in the alcohol, saturate the jute with this solution, express to a weight of 32 av. ounces, and dry at a temperature of 25 to 30 deg. C.—D.

Kneipp's Remedies, Pastor.

The following are the formulas given for these remedies by Landauer and Oberhauser (in Pharm. Ztg. 1893) and in Holfert's Arzneimittelnahmen:

Breast and Cough Tea (Brust und Husten-Thee).—Coltsfoot leaves, 8 parts; nettle leaves, 4 parts; equisetum, 4 parts; fennel, 2 parts; juniper berries, 2 parts; snake plantain, 2 parts; mallow flowers, 2 parts; linden blossoms, 2 parts; mullein flowers, 1 part; fenu-greek, 1 part.

There is also a liquid form.

Felon or Secretive Oil (Malefiz Oel—Ausscheidungs Oel).—Croton oil, 1 part; sweet almond oil, 6 parts.

Strengthening, Blood-Purifying and Laxative Tea (Staerkungs, Abfuhrungs-und Blutreinigungs-Thee).—Elder flowers, 4 parts; elder leaves, 4 parts; dwarf elder root, 4 parts; sandalwood, 4 parts; buckthorn bark, 4 parts; mis-

tletoe, 4 parts; sloe blossoms, 2 parts; strawberry leaves, 2 parts; nettle leaves, 2 parts; juniper tops, 1 part.

Stomach Drops or Consoler (Magen-trost).—St. Johnswort leaves and flowers, 30 parts; milfoil, 10 parts; juniper berries, 10 parts; dog-rose (hips), 10 parts; gentian root, 10 parts; wormwood, 5 parts; buckbean, 5 parts; equisetum, 5 parts; eye-bright, 5 parts; little centaury, 5 parts; peppermint oil, 1 part; alcohol, 60 p. c., 1,000 parts.

Searcher, or Tonic Laxative (Wuehlhuber).—This may be used as "tea" (species) or as powder. No. 1 is composed of aloes, 8 parts; fenugreek, 8 parts; fennel, 25 parts; juniper berries, 25 parts.

No. 2 is composed of aloes, 1 part; fenugreek, 1 part; fennel, 2 parts; juniper berries, 3 parts, and dwarf elder, 3 parts.

Wuehlhuber pills are made of powdered wuehlhuber massed with acacia mucilage, each weighing $1\frac{1}{2}$ gr.

Eye-Bright (Augentrost).—Extract of aloes, 1 part; fennel, 50 parts; eye-bright, 50 parts; alcohol, 100 parts; water, 400 parts.

Dropsy and Kidney Tea (Wasser-sucht und Nieren-Thee).—Equisetum, 8 parts; dog-rose, 4 parts; rosemary, 2 parts; elder root, 2 parts; sassafras, 2 parts; rue, 1 part; buckbean, 1 part; uva ursi, 1 part; mistletoe, 1 part; sandalwood, 1 part; juniper berries, 1 part.

Kneipp's Cathartic Pills; Genuine Wuerzburger Rhubarb Pills (Aechte Wuerzburger Rhabarber Pillen—Abfuhr Pillen).—Rhubarb, 40 grams; extract of aloes, 40 grams; extract of rhubarb, 10 grams; soap, 10 grams; juniper berries, 3 grams; fenugreek, 3 grams; dwarf elder, 3 grams; fennel, 3 grams. Make into 600 pills.

There is also a Wuerzburger rhubarb syrup for children and others who cannot take the pills.

Lumbago Plaster (Hexenschuss Pflaster).—Dispense burgundy pitch plaster.

Pitch Plaster (Pech Pflaster).—This is the regular pitch plaster, such as that of the pharmacopeias.

Wormwood Pills (Wermuth Pillen).—Powdered wormwood herb made into pills with acacia mucilage, each weighing $1\frac{1}{2}$ gr.

Calendula Ointment (Calendula Salbe).—Simple ointment impregnated with flower and herb of calendula.

Reise Tropfen.—This does not contain cinchona, but is composed of tinctures of chamomile, wormwood, little centaury and arnica, using fresh drugs.

Blood-Forming Bone Meal.—Iron lactate, 2 parts; manganese lactate, 1 part; manganese phosphate, 1 part, and bone meal, freshly calcined to whiteness, 200 parts.

Bone Meal is made by calcining ox bones.

Gray Bone Meal is a mixture of equal parts of white and black bone meal and powdered olibanum.

White Bone Meal is calcium phosphate.

Black Bone Meal is animal charcoal.

Clay Ointment (Lehm-Salbe) is fine bole [probably like terra alba] made into an ointment-like mixture with water.

Veilchen Blaetter und Wurzel (or violet) used in Kneipp's preparations are the leaves and root of *Viola odorata*.

Sage Oil (Salbei-Oel), St. Johnswort Oil (Johanniskraut-Oel), Rue Oil (Rauten-Oel) and other oils are infused oils prepared from the leaves like infused oil of henbane.

Tinctures.—All tinctures for Kneipp's preparations are to be prepared as far as possible from the freshly-gathered plant parts.

Tape Worm Remedy is oleoresin of male fern and castor oil in capsules.

Worm Chocolates are troches of santolin with chocolate as the vehicle.

Lard. (Adeps.—Adeps Suillus.—Axungia Porci.)

The adipose tissue adhering to the

kidneys, mesentery and omentum of the hog is considered the source of the best lard. This is freed from flesh, then cut into small pieces, removing, as far as possible, all bloody matter and the membranous tissue. Then heat in a tinned copper, porcelain, or enameled-iron dish on a water bath until the fat is about all melted, and then strain.

The U. S. P. describes lard as the prepared internal fat of the abdomen of the hog, *Sus scrofa*, purified by washing, melting, and straining.

The Brit. Pharm. describes it as the purified fat of the hog, *Sus scrofa*, and gives the following process:

From the perfectly fresh fat of the abdomen of the hog, remove as much of the external membranes as possible, suspend the fat so that it shall be freely exposed to the air for some hours, cut it into small pieces, reduce these to a uniform mass in which the membranous vesicles are completely broken, by beating in a mortar or by some similar process, put the mass thus produced into a vessel surrounded by warm water, heat to a temperature not exceeding 57 deg. C. until the fat has melted and separated from the membranous matter, and strain.

The fat may be conveniently and quickly reduced to small pieces by grinding in a food chopper. The smaller the pieces the more quickly will the lard be melted out and the more nearly odorless, therefore, will it be.

The U. S. P. directs that lard should be kept in well-closed vessels, impervious to fat, and in a cool place.

Lard, Anhydrous or Dehydrated.

Lard may be made perfectly anhydrous by heating on a water bath for about 30 minutes with about one-twelfth its weight of anhydrous or dry sodium sulfate in fine powder, then filtering through paper, using some system of hot filtration to maintain the lard in a liquid state.

Lard prepared in this manner re-

mains "sweet" much longer than the ordinary lard.—D.

Lard, Benzoinated. (Benzoated Lard.)

Lardav.oz. 16
Benzoin, coarse powder.....gr. 140

Add the benzoin to the lard and mix thoroughly; then melt the lard by means of a water bath, and, stirring, frequently, continue the heat for 2 hours, covering the vessel and not allowing the temperature to rise above 60 deg. C. Strain the liquid through muslin and stir occasionally while it cools.

When benzoinated lard is to be kept or used during warm weather, it may be hardened somewhat by adding 5 per cent. (or more if necessary) of white wax.—U. S. P.

The addition of stearin or Japan wax has also been suggested for slightly hardening lard and making it more suitable for use in summer time or in warmer climates, but white wax is to be preferred.

Benzoinated lard of the Brit. Pharm. is made from 16 av.ounces of lard and 210 grains of powdered benzoin, heating on a water bath for 2 hours, stirring frequently, then straining to remove the benzoin, and stirring the lard until cold.

Benzoated lard of the Austr. Pharm. is made like that of the Brit. Pharm., but using 280 grains of powdered Siam benzoin.

Benzoated lard of the Germ. Pharm. is made melting, on a water bath, 1 av.pound of lard, and dissolving 71 grains of benzoic acid. from benzoin, in it.

Lard may be benzoinated most conveniently and satisfactorily in the following manner:

Benzoin, coarse powder.....av.oz. 1
Etherfl.oz. 2
Castor oil, to make.....av.oz. 34

Macerate the benzoin in the ether for 24 hours, agitating frequently, filter, to the filtrate add one av.ounce of the oil.

carefully distil off the ether, and add the remainder of the oil to the residue.

Instead of the ether, 4 fluidounces of pure wood alcohol may be used.

Then melt together, on a water bath, 1 av.ounce of white wax and 3 av.pounds of lard, and incorporate with this the above oil solution of benzoin. Anhydrous lard is to be preferred for this mixture.

Lards, Factitious.

Quite a number of fats of animals, frequently called "greases," are demanded of pharmacists. Some of these lards or fats cannot be obtained, or at least with great difficulty, and as a rule other substances or mixtures of other substances are substituted for them. The formulas given herewith will be found acceptable for preparing these "greases."

Badger Fat (Dachs-Fett).

Ordinary lard is dispensed.

Bear's Fat or Grease (Baeren-Fett).

Olive oil, yellowfl.oz. 4
Lardav.oz. 12
Benzoic acid, powder.....gr. 60

Melt the lard at a gentle heat, add the oil and incorporate the acid by stirring until uniform.

Ordinary lard is most commonly given for it.

Castor Fat or Grease (Biebergeil-Fett).

Lardav.oz. 1
Beef suetav.oz. 1
Burgundy pitchav.oz. 1
Castor, powdergr. 20

Melt all together at a gentle heat, strain, and stir till cool.

A common substitute is to use lard with a few drops of tincture of castor added.

Cat's Fat or Grease (Katzen-Fett).

Lardav.oz. 4
Oil of valeriandrops 4

Dog's Fat or Grease (Hunde-Fett).

Olive oil, yellow.....fl.oz. 1
Lardav.oz. 3 or 4
Lard is often dispensed for it, but its consistence is too firm.

Eel Fat or Oil (Aal-Fett).

Cod-liver oil is usually dispensed for it. Hager recommends mixture of 9

parts each of sweet almond and castor oils and 2 of cod-liver oil.

Fox Fat or Grease (Fuchs-Fett).

Dispense lard.

Goose Grease or Oil (Gaense-Fett).

Olive oilfl.oz. 1
Lardav.oz. 4
Oil of nutmeg or mace.....drops 4

This is also dispensed without the flavoring oil.

Monkey Fat or Grease (Affen-Fett).

Lard is dispensed for this.

Rabbit Fat (Hasen-Fett).

Olive oil, yellowav.oz. 2½
Lardav.oz. 2
Beef suetav.oz. 2
Yellow waxav.oz. 1

Resin cerate is sometimes dispensed for it, but the above is a better substitute.

Skunk Oil or Grease.

Lard oilfl.oz. 8
Lardav.oz. 8
Animal oil, Dippel's.....drops 5

Snake Fat (Schlangen-Fett).

Dispense cod-liver oil.

Stork Fat (Storchen-Fett).

Dispense lard.

Wild Cat Fat or Grease (Wild Katzen- or Kater-Fett).

Dispense lard.

Wolf Fat (Wolfs-Fett).

Dispense lard.

Other lards may be found under heading Suets, which see.

Lead Tannate, Pasty or Pultiform. (Unquentum or Linimentum ad Decubitum Autenriethii.)

Oak bark, cut or bruised...av.oz. 8
Alcoholfl.oz. 1

Water, solution of lead subacetate, eachsufficient

Boil the bark for one-half hour with sufficient water so that after straining, the decoction will measure 40 av.ounces. Filter this, and to the filtrate add the solution, stirring constantly, until no more precipitate is formed. Collect this on a filter, allow to drain, transfer the damp, pasty mass (amounting to about 12 av.ounces) to a wide-mouthed bottle,

Ligatures.

add the alcohol, and shake well.—Germ. Form.

See Catgut Ligatures and Silk Ligatures.

Linctus (also called Look, Loch, Lobocho, Lincture, Lambative, etc.)

The preparations known as linctuses are now practically obsolete. They were sweetened, of the consistency of honey and intended to be licked off a spoon. Only one linctus, the common or white linctus, is mentioned in this work; see Emulsion of Almond.

Liniment, A B C.

I. The ordinary or original is made as follows:

Liniment of aconite, Brit.

Pharm.fl.oz. 1

Liniment of belladonna, Brit.

Pharm.fl.oz. 1

Liniment of chloroform, Brit.

Pharm.fl.oz. 1

A modification, which makes a clear mixture, and which is now largely used, is as follows:

II.

Liniment of aconite, Brit.

Pharm.fl.oz. 5

Liniment of belladonna, Brit.

Pharm.fl.oz. 5

Chloroformfl.oz. 2½

Camphorgr. 210

Glycerinfl.oz. 2

Dissolve the camphor in the mixed chloroform and liniments, and add the glycerin.

Liniment of Aconite.**I.**

Aconite root, No. 40 powderav.oz. 10¾

Camphorgr. 250

Alcohol, to make.....fl.oz. 16

Extract the drug by percolation with alcohol so that the percolate when mixed with the camphor will make 16 av-ounces; dissolve the camphor by agitation.—Brit. Pharm.

II.

Aconite root, powder.....av.oz. 4

Glycerinfl.dr. 2

Alcoholsufficient

Extract the drug by maceration and slow percolation to obtain 16 fluidounces of percolate, distil off 12 fluidounces, evaporate the residue to 12 fluidrams, and to this add the glycerin and 2 fluidrams of alcohol.—Eclectic.

Liniment of Aconite and Chloroform.**I.**

Fluid extract of aconite

(U. S. P.).....fl.dr. 6

Alcoholfl.dr. 10

Chloroformfl.oz. 2

Soap linimentfl.oz. 12

—N. F.

See also Liniment, Chloroform, Compound, which also contains chloroform and aconite.

II.

Castor oilfl.oz. 1

Chloroformfl.oz. 1

Ammonia waterfl.oz. 1

Tincture of aconitefl.oz. 1

Soap linimentfl.oz. 4

—Eclectic.**Liniment of Aconitine, Compound.
(Anodyne Pomade.)**

Aconitinegr. 1

Glycerinfl.dr. 1

Hydrocyanic acidfl.dr. 1

Triturate the aconitine with the glycerin until well mixed, then add the acid, mix thoroughly, and put into a well-stoppered vial.

In preparing this, care should be taken not to inhale any of the mixture, and after adding the acid, the mixture should be bottled as quickly as possible.—Eclectic.

This is applied by means of a camel's hair pencil to parts affected with neuralgia.

**Liniment of Amber Oil, Compound.
(Linimentum Succini Compositum.)**

Oil of amber, rectified.....fl.oz. 1

Oil of stillingia.....fl.oz. 1

Oil of lobeliafl.dr. 3

Olive oilfl.oz. 2

—Eclectic.

Liniment, Ammonia. (Volatile, Hartshorn, Ammoniacal or Common Liniment.)

I.

Ammonia water, 10 p. c.f.oz. 10½
 Alcoholf.oz. 1½
 Cotton seed oil.....f.oz. 17
 Oleic acidf.oz. 1

Mix all by agitation in a bottle which should be well-stoppered.

This liniment should be freshly prepared when wanted.—U. S. P.

Sometimes other oils are used instead of cotton seed oil; lard oil is excellent. The oleic acid for this purpose need not necessarily be the purified article; the crude will serve as well. Stearic acid may also be used instead of it.

Liniment of ammonia of the Brit. Pharm. is made from 1 fluidounce each of ammonia water, 10 p. c. and sweet almond oil and 2 fluidounces of olive oil.

The preparation of the Germ. Pharm. is made from 3 parts by weight of olive oil, 1 of poppy-seed oil, and 1 of 10 p. c. ammonia water.

II. Cinc. Acad. of Pharm. formula for liquid oleate of ammonium or hartshorn liniment which is an improvement on the U. S. P. formula for ammonia liniment and is intended to be used in place of the latter:

Ammonia waterav.oz. 10
 Lard oilav.oz. 9
 Cottonseed oilav.oz. 11
 Mix by agitation in a bottle.

The ingredients may be mixed if desired in the same proportion by fluid measure.

The ammonia water must be of the strength of the U. S. P., viz., 10 per cent.

This preparation is of about the same strength as liniment of ammonia U. S. P. (which see) and contains about 57 per cent. of ammonium oleate.

Liniment of Ammonia, Camphorated.

See Liniment of Camphor, Ammoniated.

Liniment of Ammonia, Compound. (Granville's Counter-Irritant Lotion.)

I. Stronger:

Stronger ammonia water...f.oz. 5
 Spirit of camphor.....f.oz. 2
 Oil of rosemaryf.dr. 1
 Alcoholto make f.oz. 8

II. Weaker:

Stronger ammonia water...f.oz. 5
 Spirit of camphor.....f.oz. 3
 Oil of rosemary.....f.dr. 2
 Alcoholto make f.oz. 10

Liniment of Ammonium Iodid.

Iodingr. 30
 Oil of rosemary.....f.dr. 2
 Oil of lavender flowers...f.dr. 2
 Camphorgr. 240
 Ammonia water, 10 p. c....f.dr. 14
 Alcohol.....to make f.oz. 16

Dissolve the iodine, the oils and the camphor, in 12 fluidounces of alcohol, then add the ammonia water and lastly, enough alcohol to make 16 fluidounces.

On standing, the liquid will become colorless, and there will, usually, be a slight precipitate, which may be separated by filtration.—N. F.

Liniment, Arnica.

This formula may be used:

Tincture of arnica.....f.oz. 4
 Soap linimentf.oz. 12

Liniment, Belladonna.

I.

Camphorgr. 365
 Fluid extract of belladonna
 root, to makef.oz. 16

Dissolve the camphor in about 13 fluidounces of the fluid extract and then add enough of the latter to make 16 fluidounces.—U. S. P.

II.

Liquid extract of belladonna
 (corresponding practically
 to fluid extract of bella-
 donna root, U. S. P.)...f.oz. 8
 Camphorgr. 365
 Distilled waterf.dr. 13
 Alcohol, to make.....f.oz. 16

Dissolve the camphor in 5 fluidounces of alcohol, then add the extract, water, and remainder of the alcohol.—Brit. Pharm.

The U. S. P. formula is the preferable one.

Liniment, Black. (Linimentum Nigrum.)

Olive oilfl.oz. 6
 Oil of turpentinefl.oz. 2
 Sulfuric acidfl.dr. 4

Add the acid very gradually, and with constant stirring, to the olive oil, allow to cool, and add the oil of turpentine.—Eclectic.

Liniment, Cajeput, Compound.

Oil of cajeput.....fl.oz. 2
 Oil of sassafras.....fl.oz. 2
 Oil of hemlock.....fl.oz. 2
 Soapsufficient

Mix together and form a liniment.—Eclectic.

The above are the directions as they are given; presumably about $\frac{1}{2}$ av.-ounce of powdered castile soap should be sufficient.

Liniment, Camphor. (Camphorated Oil.—Camphor Embrocation.)**I.**

Camphor, coarse powder...av.oz. 6
 Cottonseed oilav.oz. 24

Mix in a bottle or flask, apply a gentle heat on a water bath, loosely stoppering the bottle, and agitating from time to time until the camphor is dissolved.—U. S. P.

Liniment of camphor of the Brit. Pharm. is made from $6\frac{1}{4}$ av.ounces of camphor and 24 fluidounces of olive oil.

Camphorated oil of the Germ. Pharm. is made from 1 av.ounce of camphor and 9 av.ounces of olive oil. There is also a stronger camphorated oil in the Germ. Pharm. made from 1 av.ounce of camphor and 4 av.ounces of olive oil.

II.

Camphorav.oz. $1\frac{1}{2}$
 Chloroformfl.dr. 2
 Olive oilfl.oz. 2

Mix and dissolve the camphor by agitation.

Liniment of Camphor, Ammoniated. (Compound Liniment of Camphor.)

Camphorav.oz. 2
 Oil of lavender flowers.....m. 50
 Stronger ammonia water....fl.oz. 4
 Alcohol, to make.....fl.oz. 16

Dissolve the camphor and oil in to fluidounces of alcohol, add the water gradually with constant agitation, and then add the remainder of the alcohol.—Brit. Pharm.

Ammonio-camphorated liniment of the Germ. Pharm. is made from 1 av.ounce each of 10 p. c. ammonia water and poppy-seed oil (cottonseed oil may be used for this) and 3 av.ounces of camphorated oil (G. P.).

Camphorated ammonia liniment of the Norw. Pharm. is made from 1 part of camphorated oil (1 of camphor and 4 of olive oil), 2 of rapeseed oil and 2 of ammonia water. The preparation of the Dan. Pharm. is made from 1 of camphor, 14 of rapeseed oil and 5 of ammonia water.

Liniment of Camphor, Compound.**(Comp'd Tincture of Camphor.)**

Camphorav.oz. 2
 Capsicum, powderav.oz. $\frac{1}{2}$
 Oil of origanumfl.oz. 1
 Oil of hemlockfl.oz. 1
 Oil of sassafrasfl.dr. 2
 Oil of cajeputfl.dr. 2
 Oil of turpentinefl.dr. 1
 Alcoholfl.oz. 16

Mix, macerate for 14 days, and filter in a well-covered funnel.—Eclectic.

This is recommended for both external and internal use. It is used in chronic rheumatism, bruises, sprains, chilblains, lameness, etc. In ordinary cases, rub in well several times, then wrap in warm flannel. Internally take 20 drops on sugar. In severe and obstinate cases, bathe the parts as directed, apply flannel, and keep the latter moist with the liniment. In case of toothache, apply a small quantity of the liquid to the hollow of the tooth on a piece of cotton. If the face is swollen, apply some of the liquid externally.

The Brit. Pharm. recognizes a Liniment of Camphor, Ammoniated, which is also known as compound liniment of camphor.

Liniment, Cantharids.

Cantharides, No. 60 powd...av.oz. $2\frac{1}{2}$
 Oil of turpentine, to make.fl.oz. 16

Digest the cantharides with 16 fluid-ounces of oil, in a closed vessel, by means of a water bath, for 3 hours; then strain, and add enough oil through the strainer to make the liniment measure 16 fluidounces.—N. F. Appendix and U. S. P. 1880.

Liniment, Capsicum, Compound.

Tincture of capsicumfl.oz. 8
Tincture of opium.....fl.oz. 1½
Ammonia waterfl.oz. 1½
Oil of origanum.....fl.oz. 1
Oil of cinnamon.....fl.oz. ½
Spirit of camphor.....fl.oz. ½

—Eclectic.

Liniment, Chloroform.

Chloroformfl.oz. 4¾
Soap linimentfl.oz. 11¼

Or mix 3 fluidounces with 7 fluidounces.—U. S. P.

Liniment of chloroform of the Brit. Pharm. is made from equal volumes of chloroform and liniment of camphor (B. P.).

Liniment, Chloroform, Compound.
(Chloroform and Aconite Liniment.)

Chloroformfl.oz. 2
Tincture of aconite.....fl.oz. 2
Soap linimentfl.oz. 12

See also Liniment of Aconite and Chloroform.

Liniment of Croton Oil. (Linimentum Tiglli or Crotonis.)

Croton oilfl.dr. 4
Oil of cajeput.....fl.dr. 14
Alcoholfl.dr. 14

—N. F. and Brit. Pharm.

Croton oil liniment was formerly made (old London Pharm.) from 1 volume of croton oil and 7 of oil of turpentine.

Liniment, Croton Oil, Compound.

Croton oilfl.oz. 1
Oil of sassafras.....fl.oz. 1
Oil of turpentine.....fl.oz. 1
Olive oilfl.oz. 2

—N. F.

Liniment, G. D. D.

Tincture of aconite.....fl.dr. 6½
Chloroformfl.dr. 6½
Spirit of camphor.....fl.dr. 6½
Oil of thyme.....m. 100
Soap liniment, to make....fl.oz. 16

—New York Hospitals.

Liniment, Iodin.

Iodingr. 960
Potassium iodidgr. 360
Glycerinfl.dr. 4
Waterfl.oz. 1
Alcohol, to make.....fl.oz. 16

Mix 12 fluidounces of alcohol with the other ingredients, and dissolve the solids by agitation. Then add enough alcohol to make 16 fluidounces.—N. F.

This is modeled after the formula of the Brit. Pharm. 1885, which differed from the above only in directing 16 fluidounces of alcohol instead of simply enough to make 16 fluidounces. The preparation of the Brit. Pharm. 1898, in which the title has been changed to "strong solution of iodine," is made from 900 grains of iodine, 540 grains of potassium iodide, 15 fluidrams of water, and 14¼ fluidounces of alcohol.

Liniment of Ipecac.

Ipecac, powdergr. 120
Sweet oilfl.dr. 2
Lardav.oz. ½

—Eclectic.

Liniment of Lead Subacetate. (Linimentum Plumbi Subacetatis.)

Solution of lead subacetate.fl.oz. 5½
Cottonseed oilfl.oz. 10½

—N. F. Appendix and U. S. P. 1880.

Liniment, Lime. (Carron Oil.—Linimentum Calcis.)

Lime water, linseed oil, raw, each, equal parts by volume.

Mix well by agitation.—U. S. P.

The U. S. P. 1880 used cottonseed oil instead of the linseed oil. The Brit. Pharm. uses equal volumes of lime water and olive oil.

Liniment, Menthol.

Martindale's formula:

Mentholgr. 360
Chloroformfl.oz. 1
Alcohol, to make.....fl.oz. 4

Liniment of Mercury. (Linimentum Hydrargyri.)

Mercury ointment, 50 p. c.av.oz. 1
Stronger ammonia water...m. 160
Camphor linimentsufficient
Add to the water enough liniment to

make 1½ fluidounces; triturate the ointment with enough liniment to make 1½ fluidounces; mix the two liquids.—Brit. Pharm.

Liniment, Mott's.

Chloroform	f.oz. 2
Tincture of iodine	f.oz. 2
Tincture of aconite	f.oz. 2
Ammonia water	f.oz. 2
Soap liniment	f.oz. 8

Add the chloroform and tincture of aconite to the soap liniment, then add the tincture, shake well, and add the ammonia water.

—New York Hospitals.

Liniment of Mustard. (Linimentum Sinapis.)

Volatile oil of mustard	f.dr. 2½
Camphor	gr. 200
Castor oil	f.oz. 1
Alcohol	f.oz. 6½

Dissolve the camphor in the alcohol and add the two oils.—Brit. Pharm.

Liniment of Mustard, Compound.

Oil of mustard, volatile	f.dr. 2
Fluid extract of mezereum	f.dr. 13
Camphor	av.oz. ½
Castor oil	f.oz. 1¼
Alcohol, to make	f.oz. 8

Dissolve the camphor in 4 fluidounces of alcohol, add the fluid extract, then the oils, and finally the remainder of the alcohol.—N. F. Appendix and U. S. P. 1890.

This is practically identical with the preparation of the Brit. Pharm. 1885 (not in 1898 edition).

Liniment of Oils. (Linimentum Olei.)

Oil of cedar	f.oz. 1
Oil of cajeput	f.oz. 1
Oil of clove	f.oz. 1
Oil of sassafras	f.oz. 1

—Eclectic.

Liniment of Oils, Compound. (Concentrated Liniment.)

Oil of origanum	av.oz. 1
Oil of hemlock	av.oz. 1
Oil of cajeput	av.oz. 1
Camphor	av.oz. 1
Capsicum, powder	av.oz. ½

Mix, macerate for 14 days, agitating occasionally, and filter in a well-covered funnel.—Eclectic.

Liniment of Opium. (Anodyne Liniment.)

Tincture of opium	f.oz. 8
Soap liniment	f.oz. 8

—Brit. Pharm.

Liniment of Opium, Ammoniated.

Soap liniment	f.oz. 6
Compound camphor liniment, Brit. Pharm.	f.oz. 6
Tincture of opium	f.oz. 6

Belladonna liniment, Brit.

Pharm.	f.oz. 1
Stronger ammonia water	f.oz. 1

Mix, and after standing 7 days, filter quickly.—Brit. Form.

Liniment of Opium, Compound. (Canada Liniment.)

Tincture of opium	f.oz. 1½
Camphor	gr. 120
Alcohol	f.oz. 4
Oil of peppermint	f.dr. 3
Ammonia water, 10 p. c.	f.oz. 6

Oil of turpentine, to make

f.oz. 16
Dissolve the camphor and the oil of peppermint in the alcohol, then add the tincture of opium, ammonia water and enough oil of turpentine to make 16 fluidounces. Shake the mixture whenever any of it is to be dispensed.

This liniment will separate a short time after it has been mixed. It may be made somewhat more permanent by adding 3 fluidrams of tincture of soap bark to the ammonia water before adding it to the mixture.—N. F.

Liniment of Petroleum, Compound.

Crude petroleum	f.oz. 12
Ammonia water	f.oz. 2
Tincture of opium	f.oz. 2
Camphor	gr. 120

Mix and dissolve.—Eclectic.

Liniment of Potassium Iodid with Soap.

Curd soap, recently prepared and in shavings	av.oz. 2¾
Potassium iodid	av.oz. 2
Glycerin	f.dr. 10
Oil of lemon	m. 80
Distilled water	f.oz. 13¼

Reduce the soap to fine shreds, mix it with the water and glycerin in a porcelain dish on a water bath; when the soap is dissolved, pour the liquid into

a mortar in which the potassium has previously been powdered, mix briskly by trituration, continue the trituration until the mixture is cold, set aside for an hour, then incorporate the oil of lemon.—Brit. Pharm.

Liniment, Rheumatic.

Thomsonian (from the Materia Medica):

White soap	lb. 3
Soft water	pints 5
Capsicum, powder	oz. 2
Oil of rosemary	oz. 1
Oil of origanum	oz. 1/2
High wines	gall. 1

Dissolve the soap in 4 pints of water by boiling, dissolve the camphor and oils in the high wines, and mix the two solutions. Mix the capsicum with one pint of boiling water, steep over a hot fire for 10 minutes, and pour this into the other mixture.

Liniment, Soap. (Camphorated Tincture of Soap, U. S. P. 1850.—Liquid Opodeldoc.)

I.

Castile soap, white, dried and granulated	av.oz. 2
Camphor, small pieces	av.oz. 1 1/2
Oil of rosemary	fl.dr. 2 1/2
Alcohol	fl.oz. 23
Water, to make	fl.oz. 32

Add the soap to 6 1/2 fluidounces of boiling water and heat on a water bath until a clear gelatinous mass results. Mix this while yet warm with 16 fluidounces of alcohol and stir until solution is effected. Dissolve the camphor and oil in 7 fluidounces of alcohol by agitation. Add this solution to the warm soap mixture, mix thoroughly, and if necessary add water to make 32 fluidounces. Set aside in a cool place for 24 hours, and then filter.—U. S. P.

It is customary to use about equal parts of white and mottled castile soaps. These may be granulated conveniently by grating, and then dried by exposing in thin layers to the air for several days.

See also Spirit of Soap, Camphorated, which is a similar preparation.

II.

Soft (green) soap	av.oz. 3
Camphor	av.oz. 1 1/2
Oil of rosemary	fl.dr. 4
Distilled water	fl.oz. 6
Alcohol	fl.oz. 23

Dissolve the soap in the water, the camphor and oil in the alcohol, mix the two solutions, set aside for one week, and filter.—Brit. Pharm.

Liniment, Soap, Camphorated. (Opodeldoc.—Solid Opodeldoc.—Saponimentum Camphoratum.)

I.

Castile soap, white	gr. 600
Camphor	gr. 180
Oil of thyme	m. 25
Oil of rosemary	m. 45
Stronger water of ammonia	fl.dr. 6 1/2
Alcohol	fl.oz. 15

Introduce the soap, camphor, and alcohol into a flask or suitable bottle, and apply a gentle heat until solution is effected, taking care that no loss of alcohol be incurred by evaporation. Filter the liquid, while hot, into another flask or bottle; warm again, if necessary, to render the contents liquid, add the oils and stronger water of ammonia, and when the whole has been thoroughly mixed, pour it into small dry vials, which should have been previously warmed, and should immediately be corked and cooled.—N. F.

The quantity above given is usually divided into about 10 vials. Solid opodeldoc is directed by the Germ. Pharm. to be prepared with soap made from animal fats; but pure, white castile soap may be used, provided it has been previously deprived of water. The stronger water of ammonia should be of the full strength prescribed by the U. S. P., viz., 28 per cent.

II.

Medicinal soap	av.oz. 2
Camphor	av.oz. 1 1/2
Oil of thyme	m. 50
Oil of rosemary	m. 75
Ammonia water, 10 p. c.	fl.dr. 10
Alcohol	fl.oz. 24

The soap and camphor is to be dis-

solved by the aid of a gentle heat in the alcohol, filtered in a covered funnel into a wide-mouthed bottle, to the filtrate add the oils mixed with the ammonia, close the bottle, and quickly cool the liquid.—Germ. Pharm.

Liniment of Soap, Compound.

Thomsonian (from the *Materia Medica*):

Camphor	oz. 1
Soap	oz. 3
Spirit of rosemary.....	pint 1
Capsicum, powder	oz. ½

Digest the soap and capsicum in the spirit until the soap is dissolved, and add the camphor.

Liniment of Soft Soap. (Tincture of Green Soap, U. S. P. 1880.)

I.

Soft (i. e., green) soap....	av.oz. 10¾
Oil of lavender flowers....	f.dr. 2½
Alcohol, to make.....	f.oz. 16

Mix the oil with 5 fluidounces of alcohol, dissolve in this the soap by agitation or stirring, set the solution aside for 24 hours, filter through paper, and then pass enough alcohol through the filter to make the filtrate measure 16 fluidounces.—U. S. P.

The preparation of the U. S. P. 1890 contained some water.

See Spirit of Soap, which is similar.

II. Smith's formula for making the preparation directly from oil and alkali:

Linseed oil, raw.....	av.oz. 5½
Caustic potassa.....	av.oz. 1¼
Oil of lavender flowers....	f.dr. 2½
Alcohol	f.oz. 5
Water, to make.....	f.oz. 16

Dissolve the potassa in 3½ fluidounces of water, put the solution into a bottle of the capacity of about 24 fluidounces, add the oil and alcohol, and shake the mixture briskly from time to time until there is no further separation of oil on standing. Let the solution stand in a moderately warm place for 24 hours, then dissolve in it the oil of lavender and add enough water to make 16 fluidounces.

Purified cottonseed oil or olive oil

may be substituted for the linseed oil, but the latter makes a brown preparation of the color generally desired.

The potassa should be of the U. S. P. strength, i. e., containing 90 per cent. of absolute potassium hydroxid.

Liniment of Stillingia, Compound. (Stillingia Liniment.)

I.

Oil of stillingia.....	f.oz. 1
Oil of cajeput.....	f.dr. 4
Oil of lobelia.....	f.dr. 2
Alcohol	f.oz. 2

—Eclectic.

This preparation is often used by Eclectics of weaker strength as follows:

Oil of stillingia.....	f.dr. 4
Oil of cajeput.....	f.dr. 4
Oil of lobelia.....	f.dr. 1
Alcohol	f.oz. 3

In asthma and croup, the chest is to be bathed with this preparation and a few drops are to be taken on sugar. It is also used as an application for rheumatism and sprains.

II.

This preparation has been improved by Eclectics as follows:

Oil of stillingia.....	f.oz. 1
Oil of lobelia.....	f.dr. 4
Oil of cajeput.....	f.dr. 4
Alcohol	f.oz. 2
Glycerin	f.oz. 2

Mix ingredients in the order named.

This preparation has the advantage over the original preparation, No. I, in that its component parts do not separate on standing.

III.

Oil of stillingia.....	f.dr. 9
Oil of cajeput.....	f.dr. 4½
Oil of lobelia.....	f.dr. 2½
Alcohol, to make.....	f.oz. 4

—Cinc. Acad. Pharm.

This is practically like No. I, but No. II should be preferred.

Liniment, Stimulating.

Thomsonian (from the *Materia Medica*):

White soap	lb. 1
Whiskey (high proof).....	gall. 1
Capsicum, powder	oz. 2
Water	f.oz. 8
Essence of hemlock....	small amount

Melt the soap, add the whiskey, boil the capsicum with the water for 5 or 10 minutes, add the other liquid and a small amount of essence of hemlock.

Liniment, Turpentine. (Kentish's Liniment or Ointment.)

I.

Resin cerateav.oz. 13
Oil of turpentine.....fl.oz. 8

Melt the cerate in a capsule on a water bath, add the turpentine, and mix thoroughly.—U. S. P.

The cerate should be melted at as low a temperature as possible and the oil added gradually until a smooth mixture results.

This is a valuable application for burns and scalds, to be applied on lint soon after the occurrence of the accident.

Liniment of turpentine of the Brit. and Germ. Pharms. is a different preparation from the above, as may be observed.

II.

Soft (green) soap.....av.oz. 1¼
Camphorgr. 365
Oil of turpentine.....fl.oz. 10¼
Distilled water, to make...fl.oz. 16

Mix the soap with 2 fluidounces of the water, dissolve the camphor in the oil, gradually add the latter solution to the former, triturating until the mixture becomes a creamy emulsion, and lastly add enough distilled water to make 16 fluidounces.—Brit. Pharm.

III.

Potassium carbonateparts 6
Soft (green) soap.....parts 54
Oil of turpentine.....parts 40

Mix the potassium carbonate intimately with the soap and add the oil.—Germ. Pharm. (2nd).

Liniment, Turpentine, Acetic. (Compound Liniment of Turpentine—Linimentum Album—White Liniment—Stokes' Liniment—St. John Long's Liniment—White Oils.)

I.

Oil of turpentine.....fl.oz. 3
Fresh egg, albumen and yolk.... 1
Oil of lemon.....fl.dr. 1

Acetic acid, 36 per cent.....fl.dr. 5
Rose waterfl.oz. 2½

Triturate or beat the contents of the egg with the two oils in a mortar until they are thoroughly mixed; then incorporate the acid and rose water.

Shake the mixture, whenever any of it is to be dispensed.—N. F. and Eclectic.

See also Liniment of Turpentine and Acetic Acid, which contains some of the ingredients of the above.

II. Redwood's formula for white oils:

White and yolk of egg..... 1
Oil of turpentine.....fl.dr. 6
Solution of lead subacetate.fl.dr. 2
Alcoholfl.dr. 6
Diluted acetic acid.....fl.oz. 12

Triturate the egg and oil to a smooth mixture, add the solution, mix again, add the acid, mix once more, and finally add the alcohol.

There are many other formulas extant for white oils.

Liniment of Turpentine and Acetic Acid. (Camphorated Turpentine Liniment.)

Oil of turpentine.....fl.oz. 4
Liniment of camphor.....fl.oz. 4
Acetic acid, glacial.....fl.oz. 1

—Brit. Pharm.

See Liniment of Turpentine, Acetic, which contain some of the ingredients of the above.

Liniment, Turpentine, Acid. (Brodie's Liniment.)

Sulfuric acid.....fl.dr. 1
Olive oilfl.oz. 1
Oil of turpentine.....fl.oz. 1

Add the acid gradually to the olive oil, stirring in a mortar; when the mixture is cold, add the oil of turpentine.—New York Hospitals.

Liniment of Turpentine, Compound.

See Liniment, Turpentine, Acetic.

Liniment, Verdigris. (Linimentum Æruginis—Mel or Unguentum Ægyptiacum.)

Verdigrisav.oz. 1
Vinegarfl.oz. 7
Honeyav.oz. 14

Dissolve the verdigris in the vinegar,

strain, add the honey, and evaporate to proper consistence.

This preparation is still occasionally demanded. The above are the directions of the former London Pharmacopeia.

Lint, Medicated. (Turunda.)

Lint may be medicated by saturating with a solution of the medicating substance. The solvent is preferably water, though alcohol, ether or other liquids may be necessary. Sometimes mixtures of glycerin and other substances with water are advisable. Borated and carbolated lint may be made, for example, by saturating a certain weight of absorbent or purified lint with an aqueous solution, which may contain glycerin, containing the required amount of acid. The lint should be made to absorb all the liquid by kneading, as in making some of the gauzes (see Gauzes), then weighting down for several hours, and finally suspending on strings or wooden rods to dry.

Iodoform lint may be prepared by dissolving the requisite amount of iodoform in ether or chloroform, saturating the lint with this liquid, weighting down for several hours, then suspending on strings or wooden rods to dry. Daylight must be excluded during the entire operation.

The principal medicated lints in use and their strengths are as follows: Borated, 10 per cent.; carbolated, 5 p. c.; and corrosive sublimate, 1 in 1000.

Liquid, Blistering. (Liquor Epispasticus.)

Cantharides, No. 20 powd..av.oz. $\frac{8}{16}$
Acetic ether, to make.....fl.oz. 16

Mix the drug with 4 fluidounces of acetic ether, pack in a percolator, at the end of 24 hours pour on acetic ether, allowing percolation slowly until 16 fluidounces of percolate are obtained.—Brit. Pharm.

This preparation is twice the strength of that of the Brit. Pharm. 1885.

Liquid Extracts.

See Extracts, Liquid.

Lotion, Alkaline. (Alkaline Wash.)

Sodium carbonategr. 60
Waterfl.oz. 16
—Eclectic.

Lotion of Ammonium Chlorid.

Ammonium chloridgr. 120
Waterfl.oz. 1
Tincture of conium.....fl.oz. 1

Dissolve the salt in the water and add the tincture.—Eclectic.

Another similar eclectic lotion is the following:

Ammonium chloridav.oz. 1
Waterfl.oz. 8
Tincture of lobelia.....fl.oz. 4
Spirit of camphor.....fl.oz. 4

Dissolve the salt in the water and add the tincture and spirit.

Lotion, Astringent. (Warren's Styptic.—Styptic Balsam.)

Sulfuric acidfl.oz. $1\frac{1}{4}$
Oil of turpentine.....fl.oz. 1
Alcoholfl.oz. 1

To the acid, contained in a wedgewood mortar, slowly add the oil, in small portions at a time, constantly stirring. Allow the mixture to cool, then add the alcohol cautiously, in the same manner, and continue stirring until no more fumes arise. When the liquid is cold, pour it into a glass-stoppered bottle.

In preparing this mixture, caution should be used, so that the temperature may not rise too high. Particular care is to be observed, if a larger quantity of this mixture is to be prepared. In this case it is preferable to prepare it in several portions.—N. F.

The acid used for this preparation should be the so-called concentrated or 92½ per cent. acid.

The above preparation was introduced many years ago by Dr. Jas. Warren, who used it internally for hemorrhages.

Lotion, Black. (Black Wash.—Lotio Nigra. — Aqua Phagedonica Nigra.—Lotio Hydrargyri Nigra. —Black Mercurial Lotion.)

I.
Calomelgr. 32
Waterfl.dr. 2
Lime water, to make.....fl.oz. 8
Triturate the calomel with the water,

and gradually add a sufficient quantity of lime water to make 8 fluidounces.

This mixture should be well agitated, whenever any of it is to be dispensed.—N. F.

II.

Calomel	gr. 25
Glycerin	m. 200
Mucilage of tragacanth.....	fl.oz. 1
Lime water, to make.....	fl.oz. 8

Triturate the calomel with the glycerin and mucilage, transfer to a bottle, add 2 fluidounces of lime water, agitate thoroughly, and then add the remainder of the water.—Brit. Pharm.

Lotion of Borax. (Borax Lotion.—Cooling Wash.)

Borax, powder	gr. 240
Rose water	fl.oz. 16

Mix and dissolve.—Eclectic.

Some English preparations of the above title are also used; these are as follows:

I. Abercrombie's:

Borax	gr. 300
Diluted acetic acid.....	fl.oz. 8

II. Copeland's:

Borax	gr. 80
Rose water	fl.oz. 4
Orange flower water.....	fl.oz. 4

III. Johnson's:

Borax	gr. 160
Chalk, precipitated	av.oz. 1¼
Rose water	fl.oz. 4
Alcohol	fl.oz. 4

IV. Meig's:

Borax	av.oz. ½
Morphine sulfate	gr. 6
Rose water	fl.oz. 8

Lotion, Borax, with Morphine.

Borax	av.oz. 1
Morphine, sulfate.....	gr. 12
Decoction of golden seal (strength not stated).....	fl.oz. 16

—Eclectic.

This is used for inflamed eyes, mouth, fauces, nipples, etc.

Lotion, Cooling. (Lotion Refrigerans.—Saline Wash.)

Salt, table	av.oz. ½
Alcohol	fl.oz. 4
Diluted acetic acid.....	fl.oz. 4
Water	fl.oz. 4

Mix, and dissolve the salt.—Eclectic.

Lotion, Ethereal, Compound. (Evaporating Lotion.)

Ether	fl.oz. 3
Alcohol	fl.oz. 3
Solution of ammonium acetate	fl.oz. 3
Rose water	fl.oz. 7

—Eclectic.

Lotion, Glycerin.

Glycerin	fl.dr. 4
Water	fl.oz. 8

—Eclectic.

Lotion of Golden Seal and Aconite.

Golden seal, powder.....	gr. 240
Water, boiling	fl.oz. 4
Tincture of aconite.....	fl.dr. 1

Make a decoction of the golden seal and water, filter, evaporate to 2 fluidounces, and add the tincture.—Eclectic.

Lotion of Golden Seal, Compound.

Strong infusion of green tea.....	fl.oz. 8
Strong infusion of golden seal	fl.oz. 8
(strengths not specified.)	
Zinc sulfate	gr. 60
Gunpowder	gr. 60

Mix the decoctions, add the other ingredients, agitate briskly, and after solution has taken place and decomposition has ceased, decant the clear liquid from the sediment.—Eclectic.

Lotion of Lead and Opium. (Lead and Opium Wash.)

Lead acetate	gr. 128
Tincture of opium.....	fl.dr. 4
Water, to make.....	fl.oz. 16

Dissolve the lead acetate in about 12 fluidounces of water, add the tincture, and enough water to make 16 fluidounces.

This mixture should be well agitated, whenever any of it is to be dispensed.—N. F.

Lotion, Lobelia, Compound. (Herpetic Wash.)

Bayberry bark	gr. 120
Lobelia herb	gr. 120
Lobelia seed	gr. 120
Yellow dock	gr. 120
Vinegar or diluted acetic acid	fl.oz. 16

Extract the mixed drugs by 7 days' maceration or by percolation.—Eclectic.

The drugs may be extracted with diluted alcohol.

For erysipelas it is recommended to add 8 fluidounces of saturated solution of ammonium chlorid.

This is used as an application in erysipelas and other skin diseases.

Lotion, Mercurial, Cazenave's.

Mercuric chloridgr. 2
Spirit of camphor.....fl.dr. 1
Alcoholfl.oz. 1¼
Distilled water, to make....fl.oz. 8

—H.

Lotion, Myrrh, Compound.

Myrrh, powdergr. 110
Zinc acetategr. 45
Lead acetategr. 15
Waterfl.oz. 16

Boil the myrrh with a portion of the water for 10 or 15 minutes, when cold add the salts previously dissolved in the remainder of the water, let stand 24 hours, filter, and through the filter add enough water to make 16 fluidounces.

This is used as an eye wash.—Eclectic.

Lotion, Red. (Red Wash.)

Zinc sulfategr. 10
Compound tincture of lavenderfl.dr. 2
Water, to make.....fl.oz. 4

Used as a urethral injection.—New York Hospitals.

Lotion, Sassafras.

Sassafras pithgr. 60
Rose waterfl.oz. 16

Let stand for 4 hours, agitate occasionally, or boil for a few minutes, and strain. Distilled water may be substituted for the rose water.—Eclectic.

Lotion, Soda, Compound.

Rock saltav.oz. 3
Zinc sulfateav.oz. 1
Iron persulfate (Monsel's salt)gr. 8
Soft waterfl.oz. 16

—Eclectic.

Lotion of Sulfur, Compound. (Taylor's Lotion.)

Sulfur, sublimedgr. 90
Borax, powderav.oz. ½
Spirit of camphor.....fl.dr. 1
Glycerinfl.dr. 1½
Waterfl.oz. 3

Dissolve the borax in the water, add the spirit and then incorporate the mixture with the sulfur previously triturated to a smooth paste with the glycerin.—New York Hospitals.

Lotion, White. (White Wash.—Lotion Alba.)

Zinc oxidgr. 120
Solution of lead subacetate.fl.dr. 3
Glycerinfl.dr. 4
Lead water, to make.....fl.oz. 4

—New York Hospitals.

Another preparation of the same name used in hospitals and elsewhere is the following:

Sulfurated potassa ("sulferet of potash")gr. 60
Zinc sulfategr. 60
Waterfl.oz. 4

Dissolve each in 2 fluidounces of water, and mix the solutions.

Lotion, Yellow. (Yellow Wash.—Lotion Flava.—Aqua Phagedænica Flava.—Lotio Hydrargyri Flava.—Yellow Mercurial Lotion.—Altschaden Wasser.)

Mercuric chloridgr. 12
Water, boilingfl.dr. 2
Lime water, to make.....fl.oz. 8

Dissolve the chlorid in the boiling water, and add the solution to a sufficient quantity of lime water to make 8 fluidounces.

This mixture should be well agitated whenever any of it is to be dispensed.—N. F.

The preparation of the Brit. Pharm. is made from 17 grains of mercuric chlorid and 8 fluidounces of lime water.

Lotion of Zinc, Compound.

Zinc sulfategr. 10
Alumgr. 10
Distilled waterfl.oz. 16

—Eclectic.

Lozenges.

See Troches.

Lubricant, Surgeon's.

Fatty or oily substances, petrolatum, for example, have been used for lubricating surgical instruments, such as urethral sounds and vaginal specula. Later mucilaginous preparations are advised for this purpose, as they may be

readily removed by washing with water. Such a preparation may be made as follows:

I.

Tragacanth, whole	gr. 48
Carbolic acid, liquefied.....	m. 50
Glycerin	fl.oz. 4
Distilled water	fl.oz. 4

Mix the three liquids, pour upon tragacanth contained into a mortar or graduate, let stand for 12 to 24 hours or until the gum is thoroughly softened, then triturate or beat to a smooth paste. If desired still smoother, strain forcibly through cheese-cloth.

Dispense in an ointment jar.

II.

A preparation now on the market is stated to contain the gelatin of Irish moss with oil of eucalyptus and formaldehyde. Such a preparation may be made by adding to 16 fluidounces of mucilage of Irish moss, which see, 10 drops of oil of eucalyptus and 5 drops of formaldehyde solution.

III. Dr. Gouley recommends this:

White castile soap, powder.....	av.oz. 1
Water	fl.oz. 3
Mucilage of Irish moss (1 av.oz. to 16 fl.oz.).....	fl.oz. 3
Formaldehyde solution (40 per cent.)	m. 10
Thymol	gr. 5
Oil of thyme, white.....	m. 5
Alcohol	m. 15

Heat the soap and water, and stir until a homogeneous mixture is formed, add the mucilage, when cool add the formaldehyde, then the thymol and oil of thyme dissolved in the alcohol, stir, strain and keep in a covered vessel until all air-bubbles have vanished.

The result is an opalescent substance of the consistence of honey, which should be put up at once in 2-ounce collapsible tubes and sterilized.

IV. This is used by Leclerc and Guyon (Paris):

White castile soap, powder, glycerin, water, each, equal parts by weight.

To 6 av.ounces of such add 30 grains of pure carbolic acid or betanophthol or

90 grains of resorcin. The last is preferable, as it is not caustic.

Magnesium Tartrate.

The Rademacher preparation is made (according to H.) by dissolving tartaric acid in twice its quantity of warm distilled water, gradually adding magnesium carbonate until neutralized, then evaporating the product on a water bath to dryness and rubbing to powder.

Marrow. (Medulla.)

Take fresh marrow from cattle, cut into small pieces and heat on a water bath until thoroughly melted, then strain with expression.

The product may be dehydrated if desired by heating with a small amount of anhydrous sodium sulfate for about 15 minutes, stirring frequently, and filter by hot filtration. Such a preparation will keep better than when not dehydrated.—D.

A factitious article may be prepared by melting 1 part of oil of theobroma and adding 2 parts of fresh lard.—H.

Masses.

These are soft solids intended to be divided into pills as required. They are made into mass form in the same manner as pills. The masses are called "pills" in the Brit. Pharm.

**Mass of Copaiba. (Solidified Copai-
ba.—Pill of Copaiba, U. S. P.
1870.)**

Balsam of copaiba.....	av.oz. 3
Magnesia, light, calcined.....	gr. 84
Water	sufficient

Triturate the magnesia with a small amount of water, in a capsule, until the powder is uniformly dampened. Then gradually incorporate with it the copaiba so that a uniform mixture will result, place the capsule on a water bath, and heat during $\frac{1}{2}$ hour, frequently stirring. Lastly, transfer the mixture to a suitable vessel and set this aside until the mass has acquired a pilular consistence.—N. F. Appendix and U. S. P. 1890.

When balsam of copaiba is mixed with calcined magnesia, combination ensues, a concrete mass being formed. All

varieties of copaiba are not equally well adapted for making this preparation, depending on their relative contents of volatile oil and resin. The Maracaibo is the best, as it has the smallest proportion of oil. The presence of a small amount of water is also necessary to facilitate combination. This is the reason for moistening the magnesia before adding the copaiba. It is even advisable to agitate the latter with a small amount of water, allowing the water to subside, decanting the balsam, and mixing this with the magnesia as before.

In the U. S. P. 1880 no heat was used, the mixture of balsam and magnesia being allowed to stand until it became solid, usually about 8 or 10 hours.

Mass of Iron Carbonate. (Vallet's Mass. — Vallet's Ferruginous Mass.—Pill of Carbonate of Iron, U. S. P. 1870.—Iron Pill or Pilula Ferri, Brit. Pharm.)

I.

Ferrous sulfate, pure, clear crystals	av.oz.	4
Sodium carbonate, monohydrated	gr.	805
Honey, clarified	av.oz.	1½
Sugar, coarse powder.....	av.oz.	1
Simple syrup, distilled water, each	sufficient	

Dissolve the ferrous sulfate and the sodium carbonate, each separately, in 8 fluidounces of boiling distilled water, and having added 6 fluidrams of simple syrup to the solution of the iron salt, filter both solutions, and allow them to become cold. Introduce the solution of sodium carbonate into a bottle or flask having a capacity of about 20 fluidounces and gradually add the solution of the iron salt, rotating the vessel, constantly or frequently, until carbonic acid gas no longer escapes. Add enough distilled water to fill the bottle; then cork it and set it aside that the ferrous carbonate may subside. When subsided pour off the supernatant liquid, and continue washing the precipitate by decantation with a mixture of 1 volume of simple syrup and 19 volumes of distilled water

until the washings no longer have a saline taste. Drain the precipitate on a muslin strainer, and express as much water as possible. Then mix the precipitate at once with the honey and sugar, and evaporate the mixture in a tared capsule on a water bath, with constant stirring, until it is reduced to a weight of 4 av. ounces.—U. S. P.

This preparation contains approximately 40 per cent. of ferrous carbonate.

II. Pilula Ferri or Iron Pill:

Ferrous sulfate, pure, dried.gr.	150
Sodium carbonate, pure, dried	gr. 95
Acacia, powder	gr. 50
Tragacanth, powder.....	gr. 15
Simple syrup	fl.dr. 2
Glycerin	m. 10
Distilled water	m. 20

Mix the three liquids, add to the ferrous sulfate contained in a mortar, mix well, add the sodium carbonate, mix by trituration, let stand for 15 minutes or until the reaction is complete, then add the gums, and mix thoroughly. If the mass is too hard, a small amount of water may be added.—Brit. Pharm.

This contains 20 p. c. of ferrous carbonate.

III. Pilula Ferri Carbonici:

Ferrous sulfate, pure, clear crystals	av.oz.	7½
Sodium bicarbonate, pure.....	av.oz.	5¼
Sugar, moderate fine powd....	gr.	525
Honey, clarified	av.oz.	3¾
Distilled water	sufficient	

Dissolve the iron salt in 28 fluidounces of boiling distilled water and the sodium salt in 72 fluidounces of lukewarm distilled water, and filter both solutions separately. Then mix the two filtrates thoroughly in a bottle (about 1-gallon capacity), fill the latter with hot distilled water, close the vessel, shake well, and set aside. When the precipitate has subsided, decant the clear liquid, refill the bottle with hot distilled water, shake well, and again set aside. Repeat this affusion of hot water and decantation of supernatant liquid until the wash-water gives but slight turbidity with solution of barium nitrate or

chlorid. Transfer the precipitate to a muslin strainer, allow the liquid to drain, mix it in a porcelain or enameled-iron capsule with the sugar and honey, and evaporate the mixture on a water bath to the weight of $8\frac{1}{8}$ av. ounces.—Germ. Pharm.

This mass is to be mixed with a sufficient quantity of althea and divided into pills, when the latter are required. See Pills of Iron Carbonate.

Mass of Mercury. (Blue Mass.—Blue Pill.—Mercurial or Mercury Pill.)

I.

Mercury	av.oz. 2
Licorice root, No. 60 powder.gr.	265
Althæa root, No. 60 powder.gr.	400
Glycerin	gr. 240
Honey of rose.....	av.oz. 2

Triturate the mercury with the glycerin and honey of rose until it is extinguished, then gradually add the licorice and althæa and continue the trituration until the mass is homogeneous.—U. S. P.

Keep in well-closed containers.

This preparation is also to be had in the market in powder form known as "powdered blue mass." A preparation of this kind may be made according to the following formula:

Mercury	av.oz. 1
Sugar, fine powder.....	av.oz. 1
Slippery elm bark, fine powd.	av.oz. 1
Alcohol	sufficient

Triturate the mercury with the powdered bark, adding from time to time enough alcohol to maintain a pasty consistency, till the mercury is extinguished. Then spread the mixture on paper to dry, then powder, and incorporate the sugar.

II.

Mercury	av.oz. 2
Confection of rose.....	av.oz. 3
Licorice root, fine powder..	av.oz. 1

Triturate the mercury with the confection until the globules are no longer visible, and incorporate the licorice root.—Brit. Pharm.

Medications, Homeopathic.

Medications, in homeopathy, are of

three kinds, powders, globules, and cones.

The powders are prepared by adding to 10 gm. of milk sugar 1 cc. of the next lower than the desired strength of dilution (or 10 minims of dilution to 95 grains of milk sugar), mixing the same in a mortar with a spatula, then tritulating with a pestle until fully dry. The resulting powder will represent the degree of strength next above the dilution used in its preparation; that is, a 3x dilution will make a 4x powder, etc.

As to the method of designating the strength of medications and other homeopathic preparations, see Dilutions, Homeopathic.

Medicated globules, also called pellets or pilules, are made almost exclusively of cane sugar. They are formed into small globular masses of different sizes, designated according to the length of 10 globules laid in a straight row, measured in millimeters. Globules are also made to a limited extent of milk sugar; these will absorb alcoholic dilution containing a much larger percentage of water than will those made of cane sugar.

Globules are medicated by placing them in a vial, adding the dilution in sufficient quantity, and allowing them to stand a sufficient length of time to become saturated; any excess of liquid is then to be poured off. If necessary to remove the surplus fluid, the vial may be inverted on a clean, white blotting paper until the globules cease to cling together.

In medicating cane-sugar globules, care should be exercised not to use a dilution having an alcoholic strength of much less than 88 per cent. or that of dispensing alcohol.

As in the case of the powders, a dilution of a certain strength will make globules of the next higher strength.

Medicated cones, also called disks, are made of cane sugar, and rendered more absorbent by the addition of a small quantity of white of egg, which also

makes them very light and porous. They are formed into hemispherical masses, and are designated according to size by the diameter of the base in millimeters. The common size, numbered 6, should absorb about 2 drops of dispensing alcohol. They are medicated exactly like the medicated globules described above.

Mercury, with Chalk. (Gray Powder.)

Mercuryav.oz. 3
Honey, clarifiedgr. 350
Prepared chalkav.oz. 4½
Watersufficient

Weigh the mercury and honey into a strong bottle of the capacity of about 8 fluidounces and add 80 minims of water. Cork the bottle, and shake it for about ½ hour at a time, until the aggregate time of shaking reaches 10 hours or until the globules of mercury are no longer visible under a lens magnifying 4 diameters. This shaking may be more conveniently performed by mechanical means. Rub the chalk with water in a mortar to a thick, creamy paste, and, having added the contents of the bottle, washing out the last portions with a little water, triturate the whole to a uniform mixture. Finally dry the mixture, first between ample layers of bibulous paper, and afterwards in a dish at the ordinary temperature until it weighs 8 av.ounces. Then reduce to uniform powder without trituration.

Keep in well-stoppered bottles, protected from light.—U. S. P.

This preparation contains 38 per cent. of metallic mercury.

The preparation of the Brit. Pharm. is made by triturating 1 av.ounce of mercury with 2 av.ounces of prepared chalk.

Mercury with Magnesia.

Triturate together 1 av.ounce of mercury with 2 av.ounces of magnesium carbonate.

Mercury, Soluble, Hahnemann's.

The complex formula of Hahnemann is now replaced by the following from the British Homeopathic Pharmacopeia,

which furnishes a satisfactory and uniform preparation:

Mercury (metal)gr. 132
Nitric acid, pure (68 p. c.)...m. 80
Ammonia waterm. 70
Distilled watersufficient

Mix the acid with 6½ fluidrams of distilled water in a flask, and digest the mercury in the mixture, applying a gradually increased heat until about 110 grains of the metal have dissolved and a small portion of the solution diluted with about 20 times its bulk of distilled water yields a perfectly black precipitate with ammonia water. Dilute the hot solution with 10 fluidrams of distilled water, and, while warm, filter it into a vessel containing 4 times its bulk of cold distilled water. Having thoroughly mixed the filtrate with the water, add the ammonia water, previously diluted with 1 fluidounce of distilled water, in a thin stream, stirring constantly meanwhile. As soon as the precipitate has subsided, decant the supernatant liquid, shake the precipitate with a fresh portion of distilled water, collect it on a filter, wash it thoroughly, and dry it between folds of filtering paper, without the aid of heat.

Milk of Magnesia. (Magnesia Magna.)

Magnesium sulfateav.oz. 8¾
Sodium hydrateav.oz. 2¾
Water, to make.....fl.oz. 32

Dissolve the magnesium sulfate in 1 gallon of water and the sodium hydrate in another gallon of water and filter the solutions. Pour the sodium hydrate solution, in a thin stream, into the magnesium sulfate solution, with constant stirring. Allow the precipitate to subside and decant the clear liquid. Wash the precipitate several times by pouring on water and subsequently decanting the clear liquid until the washings are free from saline taste. Transfer the magma to a muslin strainer and allow it to drain without pressing. Then re-transfer it to suitable vessels and add enough water to make 32 fluidounces of

liquid and mix thoroughly by stirring.
—N. F.

One teaspoonful contains about 3 gr. of magnesium hydroxid.

The water used in preparing this must be free from organic matter or the magma will become discolored.

Mixture, A C E. (Chloroformum Mitigatum.)

Alcoholvolume 1
Chloroformvolumes 2
Ethervolumes 3

Mixture of Acacia. (Mistura Gummosa.)

Acacia, coarse powder.....gr. 85
Sugargr. 85
Waterfl.oz. 2

Dissolve the acacia and sugar in the water.

This preparation should be freshly made, when wanted for use.—N. F. and Germ. Pharm. (1st).

Mixture of Ammonium Chlorid. (Mistura or Mistura Solvens Simplex.—Mistura Solvens.—Solvent Mixture.

I.

Ammonium chloridgr. 180
Purified extract of licorice...gr. 180
Water, to makefl.oz. 16

Dissolve the solids in a sufficient quantity of water to make 16 fluid-ounces.—N. F.

6 fluidrams of glycerite of licorice may be advantageously substituted for the extract.

II.

Ammonium chloridgr. 190
Purified extract of licorice...gr. 115
Waterfl.oz. 16

—Germ. Form.

Mixture of Ammonium Chlorid with Tartar Emetic. (Mistura Solvens Stibiata.)

Ammonium chloridgr. 180
Purified extract of licorice...gr. 180
Tartar emeticgr. 2
Water, to make.....fl.oz. 16

Dissolve the solids in the water.

This may be prepared from the mixture of ammonium chlorid by adding to the latter the tartar emetic dissolved in a small quantity of water.

Mixture, Antidiphtheritic, Warren's.

Thymolgr. 6
Potassium chlorategr. 55
Quinine sulfategr. 32
Diluted hydrochloric acid....m. 40
Glycerinfl.oz. 1½
Brandy, to make.....fl.oz. 8

Mixture of Bismuth, Compound.

Morphine hydrochlorid.....gr. 6½
Compound tincture of carda-
momfl.oz. 2½
Chloroformm. 56
Liquid extract of nux vom-
ica, Brit. Pharm.....m. 108
Diluted hydrocyanic acid....m. 256
Concentrated solution of bis-
muth, Brit. Form.....fl.oz. 12
Distilled water, to make...fl.oz. 16

Dissolve the morphine in 3½ fluidrams of water, and tincture, chloroform, ex-tract and acid, and finally the bismuth solution and the remainder of the wa-ter.—Brit. Form.

Mixture of Bloodroot, Compound. (Cough Drops.)

Syrup of ipecac,
Syrup of squill,
Syrup of tolu,
Tincture of bloodroot,
Paregoric, eachequal parts
—Eclectic.

Mixture of Brandy.

Brandyfl.oz. 4
Cinnamon waterfl.oz. 4
Yolks of 2 eggs.
Sugarav.oz. ½

Triturate the yolk and sugar together, add the brandy and water, and mix well.—Brit. Pharm.

This is a nutritive and stimulating preparation to be used in cases of pros- tration from fevers, etc.

Mixture, Cajeput, Compound. (Hunn's Drops.)

Oil of cajeput.....fl.oz. 1
Oil of clove.....fl.oz. 1
Oil of peppermint.....fl.oz. 1
Oil of anise.....fl.oz. 1
Alcoholfl.oz. 4

This has been employed in the treat- ment of diarrhea, cholera, etc.—Eclec- tic.

Mixture, Camphor, Acid or Hope's. (Antidysenteric Mixture—Mis- tura Antidysenterica.)

Nitric acidm. 30
Tincture of opium.....m. 20
Camphor water, to make...fl.oz. 4

Mix the acid with about 2 fluidounces of camphor water, add the tincture, and lastly, enough camphor water to make 4 fluidounces.—N. F.

The acid for the above should be the regular strength or 68 per cent.

Hope's mixture originally contained nitrous acid instead of the nitric, as in the above. The fuming nitric acid which contains nitrogen tetroxid is the acid referred to as nitrous acid.

Mixture, Camphor, Aromatic or Parish's.

Comp. tinct. of lavender....fl.oz. 1
Sugargr. 60
Camphor water, to make....fl.oz. 4

Mix the tincture with about 2 fluidounces of camphor water, dissolve the sugar in the mixture, and add enough camphor water to make 4 fluidounces.—N. F.

Mixture of Camphor, Compound.

Camphor waterfl.oz. 5
Peppermint waterfl.oz. 5
Spearment waterfl.oz. 5
Paregoricfl.dr. 10
—Eclectic.

This is used for nausea and vomiting, the dose being one teaspoonful to one tablespoonful every 5 or 10 minutes.

Mixture, Carminative. (Dalby's Carminative.)

Magnesium carbonategr. 480
Potassium carbonategr. 24
Tincture of opium.....fl.dr. 3
Oil of caraway.....drops 6
Oil of fennel.....drops 6
Oil of peppermint.....drops 6
Simple syrupfl.oz. 2½
Water, to make.....fl.oz. 16

Triturate the oils with about 75 grains of magnesium carbonate, and 12 fluidounces of water gradually added. Then add the remainder of the magnesium carbonate and the other ingredients, and lastly add enough water to make 16 fluidounces.

This preparation should be freshly made when wanted for use.

Each fluidounce represents about 1 gr. of opium.—N. F.

Mixture, Castor Oil.

See Emulsion of Castor Oil, No. III.

Mixture, Chalk. (Cretaceous Mixture.)

Compound chalk powder....gr. 365
Cinnamon waterfl.dr. 13
Water, to make.....fl.oz. 4

Rub the powder in a mortar with the cinnamon water and about 6 fluidrams of water, gradually added, to a uniform mixture; transfer to a graduate and rinse the mortar with enough water to make the product measure 4 fluidounces.

—U. S. P.

The U. S. P. does not direct the use of distilled water, but this is the only kind that should be used.

This preparation should be freshly made, when wanted.

The preparation of the Brit. Pharm. is made from 60 gr. of prepared chalk, 8 gr. of powdered tragacanth, 120 gr. of sugar, and cinnamon water to make 4 fluidounces. The tragacanth keeps the other solids in better suspension than the acacia of the U. S. P. preparation.

Mixture of Chloral and Potassium Bromid, Compound. (Chloral and Bromid Compound — Compound Elixir of Potassium Bromid — Compound Elixir of Chloral with Potassium Bromid.)

I.

Chloral hydrate ...av.oz. 3 .gr. 130
Potassium bromid...av.oz. 3 .gr. 130
Extract of cannabis indica,
U. S. P.gr. 15
Extract of henbane, U. S. P. .gr. 15
Pumice, fine powder and well
washedgr. 150
Water, to make.....fl.oz. 16

Triturate the extracts in a mortar with the pumice, gradually added, until they are thoroughly disintegrated. Dissolve the chloral hydrate and potassium bromid in 10 fluidounces of water, previously heated to about 45 deg. C. and gradually add the hot solution to the extracts and pumice with constant trituration. Set the mixture aside during 24 hours, shaking it occasionally, and filter, adding enough water through the filter to make 16 fluidounces.

One fluidram represents about 12 grains each of chloral hydrate and po-

tassium bromid and $\frac{1}{8}$ gr. each of the extracts of *Cannabis indica* and henbane.—N. F.

Although this preparation is slightly weaker in chloral and bromid than the preparation heretofore recommended in the N. F., it possesses the advantage of holding the active constituents of the extracts completely in solution and is believed to be in other respects more satisfactory.

III. The Brit. Form. recognizes a similar preparation under the name "compound solution of bromo-chloral":

Potassium bromid	gr. 1280
Chloral hydrate	gr. 1280
Juice of henbane	gr. 1280
Tincture of <i>Cannabis indica</i> , Brit. Pharm.	m. 320
Tincture of fresh orange peel	m. 320
Simple syrup	fl.oz. 3
Liquid extract of licorice ..	m. 190
Distilled water, to make ..	fl.oz. 16

Dissolve the potassium bromid in $5\frac{1}{2}$ fluidounces of the water, dissolve the syrup and extract, add the bromid solution to the chloral solution, filter, and wash the filter with just enough distilled water to make the filtrate measure 16 fluidounces.

This should be shaken when it is to be dispensed.

Each fluidram contains 10 gr. each of chloral hydrate and potassium bromid.

Mixture of Chloroform and Cannabis Indica, Compound. (Chloroform Anodyne—Chlorodyne—Mixture of Chloroform and Opium—Tincture of Chloroform and Morphine.)

Chloroform	fl.oz. 2
Tincture of Indian cannabis ..	fl.oz. 3
Tincture of capsicum	fl.dr. 4
Stronger ether	fl.dr. 4
Morphine sulfate	gr. 18
Oil of peppermint	m. 15
Glycerin	fl.oz. 2
Water	fl.oz. 1
Alcohol, to make	fl.oz. 16

Dissolve the oil in 8 fluidounces of alcohol, add the chloroform, ether, and the tinctures. Mix well, and add the morphine sulfate, previously dissolved in the water and glycerin, and then add

the remainder of the alcohol.—N. F.

Each fluidram represents about 7 minims of chloroform, 11 minims of tincture of Indian cannabis, 2 minims of tincture of capsicum, and $\frac{1}{7}$ gr. of morphine sulfate.

See under heading Chlorodyne.

Mixtures, Cholera or Diarrhea.

I. Bevan's:

There are two preparations of this, one being a preventive or prophylactic, which is as follows:

Magnesium sulfite	gr. 120
Sulfurous acid	fl.oz. 2
Distilled water	fl.oz. 2
Tincture of capsicum	fl.dr. 4

Dissolve the sulfite in the water, and add the other ingredients.

This is used when there is suspicion of possible disease, the dose being a teaspoonful night and morning.

The other preparation, called the therapeutic or the remedy, differs from the above only in the addition of 2 grains of morphine sulfate.

This is used when disease is actually present, the dose being a teaspoonful every half hour until relieved.

II. Casey's:

Potassium bicarbonate	gr. 120
Comp. spirit of lavender	fl.dr. 2
Spirit of camphor	fl.dr. 4
Spirit of ammonia	fl.oz. 1
Spirit of peppermint	fl.oz. 1
Comp. spirit of ether	fl.oz. 1
Tincture of opium	fl.oz. 1

III. Christensen's:

Chlorodyne	fl.dr. 4
Paregoric	fl.oz. 1
Tincture of opium	fl.dr. 2
Tincture of catechu	fl.oz. 1
Neutralizing cordial	fl.dr. 10

IV. Close's (Geo. C.):

Diluted sulfuric acid	fl.oz. 1
Comp. tincture of cardamom ..	fl.oz. 2
Sugar	av.oz. 4
Spearmint water	fl.oz. 9

Take 2 teaspoonfuls in a wineglassful of water, after each evacuation; as a tonic, take one teaspoonful 3 times a day. The mixture is useful in chronic diarrhea.

V. Dunlap's:

Tincture of ginger.....	f.oz. 3
Spirit of peppermint.....	f.oz. 3
Tincture of opium.....	f.dr. 4
Tincture of capsicum.....	f.dr. 2
Spirit of camphor.....	f.dr. 4
Hoffmann's anodyne.....	f.dr. 4

A teaspoonful to be taken after each stool.

VI. Ebert's:

Solution of iron nitrate.....	f.dr. 2
Deodorized tinct. of opium.....	f.dr. 2
Caraway water.....	f.dr. 4

Dose, from $\frac{1}{2}$ to 1 teaspoonful after each evacuation.

VII. Greenhow's:

Guaiac resin.....	av.oz. $\frac{1}{2}$
Clove, powder.....	av.oz. $\frac{1}{2}$
Cinnamon, powder.....	av.oz. $\frac{1}{2}$
Brandy.....	f.oz. 16

Macerate the drugs in moderately fine powder with the brandy for 14 days, and filter.

The dose is from a teaspoonful to a tablespoonful, in sweetened water, every 15 or 20 minutes until relief is obtained.

VIII. Hamlin's (1):

Tincture of opium.....	f.oz. 1
Tincture of rhubarb.....	f.oz. 1
Spirit of camphor.....	f.oz. 1

IX. Hamlin's (2):

Tincture of opium.....	f.oz. 1
Tincture of ginger.....	f.oz. 1
Tincture of capsicum.....	f.dr. 4
Tincture of cardamom.....	f.oz. 1

This is used in the second stage of cholera when there is threatened collapse.

X. Harney's (Gen'l):

Chloroform.....	f.oz. 1
Tincture of opium.....	f.oz. 1
Spirit of cinnamon.....	f.oz. 1
Spirit of peppermint.....	f.oz. 2
Camphor, powder.....	gr. 16
Syrup of ginger.....	f.oz. 2

Mix and dissolve.

XI. Loomis' (in N. F.):

Tincture of opium.....	f.dr. 4
Tincture of rhubarb.....	f.dr. 2
Comp. tincture of gambir.....	f.oz. $1\frac{1}{2}$
Oil of sassafras.....	m. 20
Compound tincture of lavender, to make.....	f.oz. 4

XII. Rubini's:

Camphor.....	av.oz. 1
Hoffmann's anodyne.....	f.oz. 2

Dose: 2 to 5 drops on sugar every 20 minutes until relieved.

XIII. Rademacher's (in H.):

Zinc acetate.....	gr. 90
Distilled water.....	f.oz. 6
Mucilage of acacia.....	f.oz. 1

XIV. Ruschenberger's:

Tincture of opium.....	f.oz. 1
Spirit of camphor.....	f.oz. 1
Tincture of capsicum.....	f.oz. 1
Spirit of peppermint.....	f.oz. 1
Aromatic tincture of rhubarb.....	f.oz. 1

Dose: 30 to 40 drops in water.

XV. Russian:

Thielmann's may be dispensed, though other similar mixtures are used.

XVI. Scammon's:

Tincture of opium.....	f.dr. 3
Spirit of camphor.....	f.dr. 3
Tincture of capsicum.....	f.dr. 1
Diluted alcohol.....	f.dr. 1

XVII. Squibb's (in N. F.—also called compound tincture of opium):

Tincture of opium.....	f.dr. 6
Tincture of capsicum.....	f.dr. 3
Spirit of camphor.....	f.oz. 6
Chloroform.....	f.dr. $2\frac{1}{2}$
Alcohol.....	f.dr. 14

XVIII. Sun (in N. F.):

Tincture of opium.....	f.dr. 6
Tincture of capsicum.....	f.dr. 3
Tincture of rhubarb.....	f.dr. 3
Spirit of camphor.....	f.dr. 6
Spirit of peppermint.....	f.dr. 6
Alcohol.....	f.dr. 6

Mix them and filter.

XIX. Swedish:

Thielemann's are also known by this name.

XX. Thielemann's (in N. F.):

Wine of opium.....	f.oz. 1
Tincture of valerian.....	f.oz. $1\frac{1}{2}$
Ether, stronger.....	f.dr. 4
Oil of peppermint.....	f.dr. 1
Fluid extract of ipecac.....	m. 16
Alcohol.....	to make f.oz. 4

This preparation is practically identical with the Mistura Thielemanni of the Swedish Pharmacopeia.

Thielemann's Mixture of the Swedish

Pharm. is made from 2 parts of oil of peppermint, 22 of alcohol, 10 of wine of opium with saffron (containing 10 p. c. of opium and 3 1/3 p. c. of saffron), 25 of wine of ipecac (1:10), and 40 of ethereal tincture of valerian (1:5).

XXI. Velpeau's:

Tincture of opium.....	fl.dr. 10
Compound tincture of gambir	fl.oz. 21
Gum camphor	gr. 65

Mixture, Cochineal.

Cochineal, powder	gr. 10
Potassium carbonate	gr. 20
Water	fl.oz. 4
Sugar	to sweeten

—Eclectic.

Mixture, Copaiba, Compound.

The first two preparations given below are mentioned by the N. F.; the third is an Eclectic preparation.

I. Lafayette Mixture:

Balsam of copaiba.....	fl.oz. 2
Spirit of nitrous ether	fl.oz. 2
Compound tincture of lavender	fl.oz. 2
Solution of potassa.....	fl.dr. 4
Simple syrup	fl.oz. 5
Mucilage of acacia.to make	fl.oz. 16

Mix the balsam with the solution and the spirit. Then add the tincture, and lastly, the syrup and mucilage. Mix the whole thoroughly by shaking.

This mixture should be well agitated, whenever any of it is to be dispensed.

Each fluidram contains 7½ minims of copaiba.

In the former N. F., this was made with mucilage of dextrin and the mixture was said not to separate so quickly.

A mixture of somewhat similar composition, in considerable use in some parts of the country, is the following:

II. Chapman's Mixture:

Balsam of copaiba	fl.oz. 4
Spirit of nitrous ether	fl.oz. 4
Compound tincture of lavender	fl.oz. 1
Tincture of opium.....	fl.dr. 4
Mucilage of acacia	fl.oz. 2
Water.....to make	fl.oz. 16

III. Eclectic (also called Diuretic Drops):

Spirit of nitrous ether.....	fl.oz. 2
Sweet almond oil.....	fl.oz. 2
Balsam of copaiba.....	fl.oz. 1
Oil of turpentine.....	fl.oz. 1
Camphor	gr. 20

Mixture, Copper.

Rademacher's:

Tincture of copper acetate, Rademacher's	m. 60
Mucilage of acacia.....	fl.dr. 5
Cinnamon water	fl.oz. 3¾
Distilled water	fl.oz. 3¾

—H.

Mixture, Creosote.

Creosote, beechwood	m. 4
Spirit of juniper	m. 4
Simple syrup	fl.dr. 2
Distilled water, to make.....	fl.oz. 4

—Brit. Pharm.

The preparation of 1885 had also 4 m. of glacial acetic acid (equal to about 1 fluidram of diluted acetic acid).

Mixture, Eucalyptus, Compound.

This preparation is used in this city for gonorrhea:

Mucilage of acacia	fl.oz. 2
Solution of potassa	fl.oz. 1½
Sandalwood oil	fl.oz. 2
Fluid extract of eucalyptus.....	fl.oz. 1
Fluid extract of cubeb.....	fl.oz. 2
Camphor water	fl.oz. 4
Water, to make.....	fl.oz. 16

Mixture, Expectorant, Stokes'. (Stokes' Expectorant.)

Ammonium carbonate	gr. 128
Fluid extract of senega.....	fl.dr. 4
Fluid extract of squill.....	fl.dr. 4
Camphorated tincture of opium	fl.oz. 2½
Ammonia water	sufficient
Water	fl.oz. 1½
Syrup of tolu, to make.....	fl.oz. 16

Neutralize the fluid extract with exactly sufficient ammonia water. To this add the fluid extract, the tincture and the ammonium carbonate, previously dissolved in the water, and then add the syrup of tolu.—N. F.

Mixture, Gentian, Alkaline.

This preparation is used in some English hospitals. Its formula is:

Sodium bicarbonate	gr. 240
Diluted hydrocyanic acid.....	m. 50
Compound infusion of gentian	fl.oz. 16

Mixture of Guaiac. (Guaiacum Mixture.)

Guaiac resin, powder.....	gr. 180
Sugar	gr. 180
Acacia, fine powder.....	gr. 110
Cinnamon water	fl.oz. 16

Triturate the powdered guaiac with the sugar and acacia, then gradually add the cinnamon water, and mix thoroughly.

This mixture should be well agitated, whenever any of it is to be dispensed.—N. F.

The preparation of the Brit. Pharm. differs from the above only in containing 27 gr. of powdered tragacanth for the acacia.

Mixture, Iron.

Rademacher's:

Tincture of iron acetate,	
Rademacher's	fl.oz. 1
Mucilage of acacia.....	fl.oz. 1½
Water	fl.oz. 5½

—H.

Mixture of Iron, Acid.

A preparation similar to this is used in hospitals:

Ferrous sulfate	gr. 80
Magnesium sulfate	gr. 360
Diluted sulfuric acid.....	fl.dr. 1
Infusion of quassia, to make	fl.oz. 4

Mixture of Iron, Aromatic. (Heberden's Mixture or Ink.)

This English preparation is sometimes used here:

Pale cinchona	av.oz. ¾
Columbo	gr. 150
Clove	gr. 100
Iron filings	gr. 180
Compound tincture of car- damom	fl.oz. 2½
Tincture of orange peel...	fl.dr. 2½
Peppermint water, to make.	fl.oz. 16

Reduce the cinchona, columbo and clove to coarse powder, digest with 12 fluidounces of peppermint water, in a closed vessel for 3 days, agitating frequently, strain, and add the other ingredients.

Mixture, Iron, Compound. (Griffith's Mixture.—Griffith's Myrrh Mixture.—Antihæctic Mixture.—Mis-**tura Ferri Composita.—Ferrated Emulsion of Myrrh.)**

Ferrous sulfate, pure, clear crystals	gr. 45
Potassium carbonate	gr. 60
Myrrh, pieces	gr. 135
Sugar	gr. 135
Spirit of lavender	fl.oz. 1
Rose water, to make.....	fl.oz. 16

Break the myrrh into small pieces, mix it and the sugar and potassium carbonate, in a mortar, with 12 fluidounces of rose water, at first gradually added, so that a uniform mixture may result. Transfer this to a graduate, add the spirit, and then the ferrous sulfate, previously dissolved in about 1 fluidounce of rose water, and lastly enough rose water to make the product measure 16 fluidounces.—U. S. P.

The myrrh used for this preparation should be selected pieces of the gum; on no account should the powder be employed.

The U. S. P. directs the preparation to be freshly made, when wanted. However the above mixture may be made up without the iron, to 15 fluidounces, to the latter adding the ferrous sulfate dissolved in 1 fluidounce of rose water when the mixture is wanted. The mixture without the iron is quite stable.

The Brit. Pharm. uses 42 gr. of ferrous sulfate, 50 of potassium carbonate, 100 each of myrrh and sugar, 85 minims of spirit of nutmeg and rose water to make 16 fluidounces.

Mixture of Licorice, Compound. (Brown Mixture.—Mistura Fusca.)

I.

Pure extract of licorice...	av.oz. ½
Acacia, granulated	av.oz. ½
Spirit of nitrous ether.....	fl.dr. 4
Simple syrup	fl.dr. 6½
Wine of antimony.....	fl.oz. 1
Paregoric	fl.oz. 2
Water, to make.....	fl.oz. 16

Rub the extract and acacia in a mortar with 8 fluidounces of water until they are dissolved. Transfer this solution to a graduate containing the other ingredients, and rinse the mortar with

enough water to make the product measure 16 fluidounces.—U. S. P.

If glycerite of licorice be used instead of the extract, a preparation will be obtained which is almost free from insoluble matter.

II.

Extract of licorice, powder..gr.	120
Acacia, powder	gr. 120
Sugar	gr. 120
Paregoric	fl.oz. 1
Tincture of bloodroot.....	fl.dr. 4
Spirit of nitrous ether.....	fl.dr. 2
Water	fl.oz. 6

Triturate the three solids with the water until practically dissolved, strain, and add the other ingredients.—Eclectic.

Mixture of Linseed Oil.

The following have been used under this name:

I.

Linseed oil, raw.....	fl.oz. 3
Yolk of egg	fl.oz. 4
Cinnamon water, to make..	fl.oz. 16
Make an emulsion.	

II.

Linseed oil, raw.....	fl.oz. 4
Lemon juice	fl.oz. 2
Mucilage (any kind, acacia, dextrin, etc.)	fl.oz. 1
Water, to make.....	fl.oz. 12

Mixture of Magnesia and Asafetida. (Dewees' Carminative.)

Magnesium carbonate	gr. 360
Tincture of asafetida.....	fl.dr. 9½
Tincture of opium.....	m. 80
Sugar	av.oz. 1¾
Distilled water...to make	fl.oz. 16

Rub the magnesium carbonate and sugar in a mortar, with the two tinctures, then gradually add enough distilled water to make the mixture measure 16 fluidounces.—N. F. Appendix and U. S. P. 1880.

Mixture of Oils, Camphorated. (Mistura Oleorum Camphorata.)

Oil of clove	fl.oz. 1
Oil of cajuput	fl.oz. 1
Oil of amber, rectified.....	fl.oz. 1
Camphor	av.oz. 1

—Eclectic.

This is used to relieve toothache.

This preparation has been sold exten-

sively under the name of "Parisen's Vegetable Specific."

Mixture of Oils, Compound. (Vermifuge Oil.)

Castor oil	fl.oz. 2
Oil of wormseed.....	fl.oz. 2
Oil of turpentine.....	fl.oz. 1
Oil of anise.....	fl.oz. 1

—Eclectic.

Use in teaspoonful doses for adults, every 2 hours. After using for 2 or 3 days, a purgative should be taken.

Mixture, Oleo-Balsamic. (Mistura Oleoso-Balsamica. — Balsamum Vitæ Hoffmanni.—Hoffmann's Balsam of Life.)

Oil of lavender flowers.....	m. 30
Oil of thyme	m. 30
Oil of lemon	m. 30
Oil of nutmeg	m. 30
Oil of orange flowers.....	m. 30
Oil of clove.....	m. 25
Oil of cinnamon	m. 25
Peru balsam	m. 80
Alcohol, to make.....	fl.oz. 16

Dissolve the oils and the balsam in the alcohol, let the solution stand a few days, and then filter.—N. F.

The formula of the Germ. Pharm. is practically the same as the above, but contains no oil of orange flowers, although the earlier editions of this work did specify this ingredient, also mentions eugenol instead of oil of clove. The preparation of the Austr. Pharm. contains no oil of thyme.

Mixture of Rhubarb, Compound. (Squibb's Rhubarb Mixture.)

Fluid extract of rhubarb....	m. 90
Fluid extract of ipecac.....	m. 15
Sodium bicarbonate	gr. 175
Glycerin	fl.oz. 4
Peppermint water, to make	fl.oz. 16

Dissolve the sodium bicarbonate in about 8 fluidounces of peppermint water, then add the fluid extracts and glycerin, and lastly, enough peppermint water to make 16 fluidounces.—N. F.

This is closely related to mixture of rhubarb and soda, U. S. P., containing the same ingredients as the latter, but the official mixture is about 20 per cent. the stronger.

Mixture of Rhubarb and Soda.

Sodium bicarbonate	gr. 25	6
Fluid extract of rhubarb....	f.dr. 2	
Fluid extract of ipecac.....	m. 25	
Spirit of peppermint.....	f.dr. 4	½
Glycerin	f.oz. 5	½
Water, to make.....	f.oz. 16	

Dissolve the sodium bicarbonate in about 7 fluidounces of water, then add the fluid extracts, the glycerin, and the spirit, and the remainder of the water.

—U. S. P.

Mixture of Sassafras and Opium.
(*Mistura Opii Alkalina.*—Godfrey's Cordial.)

Oil of sassafras.....	m. 8	
	(about drops 12)	
Tincture of opium.....	f.dr. 4	
Alcohol	f.dr. 6	
Potassium carbonate	gr. 60	
Molasses	f.oz. 5	
Water, to make.....	f.oz. 16	

Mix the tincture with the alcohol in which the oil had previously been dissolved. Dissolve the potassium carbonate in about 8 fluidounces of water, mix this with the molasses, then add the mixture first prepared, and lastly, enough water to make 16 fluidounces. Allow the mixture to become clear by standing, then pour off the liquid portion and preserve it for use.

Each fluidram contains 2 minims of tincture of opium, corresponding to about 1/5 gr. of opium.—N. F.

Mixture of Soda.

Fluid extract of rhubarb....	f.dr. 2	
Tincture of cinnamon.....	f.dr. 4	
Brandy	f.dr. 2	
Sodium bicarbonate	gr. 60	
Oil of clove.....	drops 2	
Simple syrup	f.oz. 3	
Water	f.oz. 4	

This is similar to Mixture of Rhubarb and Soda and Mixture of Rhubarb, Compound, which see.

Mixture of Soda and Spearmint.
(*Soda Mint.*)

Sodium bicarbonate	gr. 360	
Aromatic spirit of ammonia..	m. 75	
Spearmint water, to make..	f.oz. 16	

Dissolve the sodium bicarbonate in about 12 fluidounces of spearmint water, add the spirit and enough spearmint

water to make 16 fluidounces. Filter, if necessary.—N. F.

While the above directs the use of spearmint water, peppermint water is generally employed.

Mixture, Splenetic. (Spleen Mixture.
—*Gadberry's Mixture.*)

Ferrous sulfate, pure.....	gr. 100	
Quinine sulfate	gr. 100	
Nitric acid	m. 100	
Potassium nitrate	gr. 300	
Water, to make.....	f.oz. 16	

Triturate the ferrous sulfate, reduced to powder, with the acid previously mixed with an equal volume of water. When effervescence has ceased, warm the mixture gently, until it no longer evolves visible vapors of a yellowish tint. Then add to it the quinine sulfate, the potassium nitrate, and lastly, enough water to make 16 fluidounces. When solution has been effected, filter.—N. F.

Mixture, Startin's.

Magnesium sulfate	gr. 360	
Ferrous sulfate	gr. 60	
Diluted sulfuric acid.....	f.dr. 2	
Syrup of wild cherry.....	f.oz. 1	
Water, to make.....	f.oz. 4	

This is given in teaspoonful doses to be taken after meals.

Another mixture used by Dr. Startin is the so-called "acid aperient mixture," which is prepared as follows:

Magnesium sulfate	av.oz. 3	
Diluted sulfuric acid.....	f.dr. 3	
Fluid extract of licorice....	f.dr. 3	
Water, to make.....	f.oz. 16	

The first mentioned, the tonic mixture, is the one generally used in this country. It is frequently made with some syrup other than syrup of wild cherry, such as simple syrup. The "mixture of iron, acid," is a slight variation of this mixture.

Mixture, Sulfuric Acid. (Haller's Acid Elixir.)

Sulfuric acid	av.oz. 1	
Alcohol	av.oz. 3	

Add the acid very gradually to 3 av. ounces of alcohol, contained in a flask, agitating after each addition, and taking care that the temperature of the mixture be not allowed to rise above 50

deg. C. When the mixture is cold, add enough alcohol, if necessary, to make 4 av. ounces.

The same product may be obtained, approximately, by carefully and slowly adding 1 volume of sulfuric acid to 7 volumes of alcohol, and this method may be used when small quantities are required for immediate use in a prescription.—N. F. and Germ. Pharm.

The sulfuric acid used in this preparation should be chemically pure and of the strength designated by the U. S. P., viz., 92½ per cent. of absolute acid.

Mixture of Tar Oil. (Tar Mixture.—*Mistura Picis Liquidæ.*)

Purified extract of licorice.....	gr. 480
Oil of tar, pure.....	fl.dr. 4
Chloroform.....	m. 75
Oil of peppermint.....	m. 20
Alcohol.....	fl.oz. 2½
Sugar.....	av.oz. 4¼
Water, to make.....	fl.oz. 16

Add the extract and sugar to 10 fluid-ounces of water, contained in a covered vessel, and heat the mixture to boiling until the solids are dissolved. Then add the oil of tar, cover the vessel, and allow the contents to cool, stirring occasionally. Next add the chloroform and oil of peppermint previously dissolved in the alcohol, and lastly, enough water to make 16 fluidounces.

This mixture should be well agitated, when any of it is to be dispensed.—N. F.

Mixture, Taraxacum Laxative.

The following is used in this city under the above name:

Magnesium sulfate.....	av.oz. 1
Diluted nitromuriatic acid.....	fl.oz. 1
Fluid extract of conium.....	fl.oz. 1
Fluid extract of dandelion.....	fl.oz. 4
Aromatic fl. ext. of cascara.....	fl.oz. 4
Water, to make.....	fl.oz. 16

Mixture, Tonic, Compound.

(*Mistura Alterantiæ Composita.*)

Ferrous sulfate.....	gr. 40
Sodium phosphate.....	gr. 240
Quinine (alkaloid).....	gr. 128
Strychnine (alkaloid).....	gr. 4
Sugar.....	av.oz. 9¼
Diluted phosphoric acid.....	fl.oz. 9½
Distilled water.....	sufficient

Dissolve the iron sulfate in 6 fluidrams of boiling distilled water, also dissolve the sodium phosphate in 1½ fluidounces of boiling distilled water, and mix the 2 solutions; collect the precipitate and wash it with distilled water until the washings are tasteless; add this precipitate together with the quinine and strychnine to the diluted phosphoric acid, shake until dissolved, add the sugar, dissolve without heat and strain.—Eclectic.

This is similar to Easton's Syrup.

Mixture, Wormseed, Compound. (Mistura Chenopodii Composita—Worm Mixture.)

Castor oil.....	fl.oz. 3
Oil of wormseed.....	fl.dr. 3
Oil of anise.....	fl.dr. 3
Tincture of myrrh.....	fl.dr. 3

This is a vermifuge, to be used in doses of one teaspoonful for an adult 3 or 4 times daily for 3 successive days, then to be followed by a cathartic.—Eclectic.

Mixture, Zollickoffer's.

Potassium iodid.....	gr. 20
Guaiac resin.....	gr. 20
Wine of colchicum root.....	fl.dr. 1
Cinnamon water.....	fl.oz. 2
Syrup of ginger.....	fl.oz. 2

Sometimes simple syrup is used instead of syrup of ginger.

Mollin.

See Soap, Fat.

Mucilage of Acacia. (Mucilage of Gum Arabic.)

Acacia, in small fragments.....	av.oz. 6¼
Lime water.....	av.oz. 6¼
Distilled water.....	sufficient

Wash the acacia with cold water and allow it to drain. Add the lime water and enough water to make the mixture weigh 18½ av. ounces, agitate or stir occasionally until the gum is dissolved, and strain.—U. S. P.

The product measures about 16 fluid-ounces. It should be kept in well-stoppered, completely filled bottles, in a cool place.

Only the best select acacia in clean, clear tears (never in powder) should

be used. The water should be cold or at most lukewarm, not hot.

The lime water facilitates solution and aids in preserving the preparation. Tolu water is another excellent solvent and preservative for use in this preparation and has been highly recommended for this purpose.

The preparation of the Brit. Pharm. is made from $6\frac{1}{4}$ av. ounces of gum and 9 fluidounces of distilled water; dissolve in a closed vessel and strain.

The preparation of the Germ. Pharm. is made from 1 av. ounces of gum and 2 av. ounces of distilled water.

Mucilage of Dextrin.

Dextrinav.oz. $5\frac{1}{2}$
Water, to make.....fl.oz. 16

Mix them in a tared vessel, and heat the mixture, under constant stirring, to near boiling, until the dextrin is dissolved and a limpid liquid results. Then restore any loss of water by evaporation, strain the liquid through muslin, and allow it to cool short of gelatinizing, when it will be ready for immediate use.

If the mucilage is not at once to be used for preparing emulsions or other mixtures, transfer it, while hot, to bottles, which should be filled to the neck. Then pour into each bottle a sufficient quantity of olive or other bland fixed oil to form a protecting layer, and when the mucilage has gelatinized, securely cork the bottles, and keep them in a cool place, in an upright position.

When gelatinized mucilage of dextrin is to be used for the preparation of emulsions or for other mixtures, pour off the protecting layer of oil from the surface, remove the remainder of the oil by a pellet of absorbent cotton and warm the bottle gently, until the mucilage is liquefied. Then allow it to cool short of gelatinizing.

The kind of dextrin suitable for this preparation is the commercial, while variety, provided it still contains some unaltered or only partially altered starch and forms a jelly on cooling when made

into a mucilage after the formula above given. The yellow variety, which is completely soluble in 2 parts of cold water, will not answer the purpose.—N. F.

Mucilage of Elm. (Mucilage of Slippery Elm Bark.—Mucilago Ulmus.)

Slippery elm bark, bruised.av.oz. 1
Waterfl.oz. 16

Digest the bark with the water on a water bath during 1 hour, then strain.—U. S. P.

Elm bark is difficult to bruise so that it is advisable to grind it coarsely in a mill or to cut it with an herb cutter.

This preparation should be freshly made when wanted.

Mucilage of Irish Moss. (Mucilage of Chondrus or Carrageen.)

Irish mossav.oz. $\frac{1}{2}$
Water, to make.....fl.oz. 16

Wash the Irish moss with cold water, then place it in a suitable vessel, add 16 fluidounces of water, and heat it, on a boiling water bath, for 15 minutes, frequently stirring. Then strain it through muslin, and pass enough water through the strainer to make the liquid, when cold, measure 16 fluidounces.

This preparation may also be made in the following manner:

Gelatin of Irish moss.....gr. 145
Water, to make.....fl.oz. 16

Heat the gelatin with 16 fluidounces of water, at a boiling temperature, until it is completely dissolved. Then allow the solution to cool, and add enough water, if necessary, to make 16 fluidounces.

Mucilage of Irish moss, thus prepared, is well adapted for the preparation of emulsions of fixed oils. If it is, however, required for admixture with clear liquids, it should be diluted, when freshly made, and while still hot, with about 3 volumes of boiling water, filtered, and the filtrate evaporated to the volume corresponding to the proportions above given. The filtration may be greatly facilitated by filling the filter loosely

with absorbent cotton, and pouring the liquid upon the latter.

This mucilage may be preserved for some time by transferring it, while hot, into bottles, which should be filled to the neck, then pouring a layer of olive or other bland fixed oil on top, securely stoppering the bottles, and keeping them in an upright position in a cool place. When the mucilage is wanted for use, the layer of oil may be removed by means of absorbent cotton.—N. F.

Mucilage of Linseed.

A mucilage of linseed may be prepared as follows:

Linseed, wholeav.oz. 3
Distilled water, warm.....fl.oz. 14½

Macerate for 6 hours, agitating frequently and strain.—D.

The linseed should be rinsed off, before using, in a sieve with running water, to remove adherent dust.

Mucilage of Quince Seed. (Mucilage of Cydonium.)

Quince seed, whole.....gr. 40
Distilled waterfl.oz. 4

Macerate the quince seed for ½ hour, in a covered vessel, with the distilled water, frequently agitating. Then drain the liquid through muslin without pressure.

This preparation should be freshly made, when required for use.—N. F. Appendix and U. S. P. 1880.

Mucilage of Salep.

Salep, fine powder.....gr. 72
Water, coldfl.oz. 1½
Water, boilingfl.oz. 14½

Place the powder into a flask containing the cold water and shake until the powder is well divided. Then add the boiling water and shake the mixture continuously until it has cooled to 25 deg. C. or below this temperature. The cooling may be hastened by frequent and brief immersion of the flask in cold water.

This preparation should be freshly made, as required for use.

If sugar or syrup is prescribed in the same mixture with mucilage of salep, it

is preferable to triturate the required quantity of powdered salep with either of the former, as the case may be and then to rapidly add the proportionate amount of boiling water.—N. F. and Germ. Pharm.

Mucilage Sassafras Pith. (Mucilago Sassafras Modullæ.)

Sassafras pithgr. 36
Waterfl.oz. 4

Macerate the pith in the water during 3 hours, and strain.—U. S. P.

The mixture should be stirred frequently during maceration. The pith should be broken into small pieces before adding the water.

The preparation should be freshly made, when wanted.

Mucilage of Starch.

Starchgr. 200
Distilled waterfl.oz. 16

Triturate the starch with water gradually added until a smooth paste is formed, then boil for a few minutes, constantly stirring.—Brit. Pharm. 1885.

Mucilage of Tragacanth.

I.

Tragacanth, in pieces.....av.oz. 1
Glycerinav.oz. 3
Water, to make.....av.oz. 16½

Mix the glycerin with 12 fluidounces of water in a tared vessel, heat to boiling, add the tragacanth, and let it macerate for 24 hours, stirring occasionally. Then add the remainder of the water, beat the mixture so as to make it of uniform consistence, and strain it forcibly through muslin.—U. S. P.

II.

Tragacanth, pure, powder...gr. 100
Alcoholfl.dr. 3
Distilled water, to make...fl.oz. 16

Mix the gum with the alcohol in a bottle, agitating thoroughly, then add the water, and shake immediately.—Brit. Pharm.

Mulls, Plaster and Salve.

Plaster mulls and salve mulls were introduced in dermatologic practice by Dr. Unna. Plaster mulls may be made in the following manner:

Place a fine, moist linen cloth on an

ironing board, which is not too thickly padded, over this a sheet of gutta-percha, which must not be too thin, however, about 6 to 8 inches wide, and over this a large sheet of smooth gauze, which must not come in contact with the moist linen. Then the gauze is made to adhere to the gutta-percha by ironing over with a flat iron, which requires some practice, for if the iron is too hot, and remains too long on the gauze, the gutta-percha will become perforated; on the other hand, when not hot enough, the two will not adhere permanently. This fabric is then spread and fastened on a plaster board, and coated several times with the plaster mass, which is dissolved in petroleum benzine in the proportion of 1 to 4, or even 1 to 3.

To prepare the plaster, heat a piece of caoutchouc for $\frac{1}{2}$ hour to a temperature of 200 deg. C. After cooling, cut into pieces as small as possible, place in an iron or brass mortar into a steam bath, add to 3 parts of caoutchouc, 1 part of oleic acid and 3 parts of resin and knead thoroughly, at intervals, until no more lumps of caoutchouc are visible. This is dissolved, as above stated, in 3 or 4 parts of petroleum ether (gasolin) to 1 part of the mass. With this solution the gauze is to be coated several times, avoiding presence of any fire. When dry, a piece of starched gauze is to be laid on the face.

The National Formulary states that salve mulls are ointments of high fusing points, containing the desired medicinal agent and spread upon gauze or "mull" in a manner similar to the ordinary spread plasters. Although these mulls are more conveniently produced with the aid of special mechanical appliances, it is quite practicable to prepare them on a limited scale as follows:

A sheet of moistened parchment paper is spread smoothly on a table top, the excess of moisture wiped off with a cloth, and a corresponding piece of un-

sized gauze is evenly stretched upon the parchment paper and held in place by thumb tacks. The previously melted and partly cooled ointment is then spread evenly on the gauze by means of a broad, flat, bristle brush, and when a sufficient layer has been applied in this way, the surface is smoothed by the aid of two flexible spatulas, heated by immersion in hot water, wiped dry, and used alternately to expedite this operation. A smooth surface having been attained, the thumb tacks are removed, and the salve mull is withdrawn from the parchment paper, this operation being facilitated by wrapping the uncoated end of the gauze over a flat stick of wood. The salve mull is then suspended on a string in a cool room, and when thoroughly chilled, it is covered with paraffin paper and rolled up.

Salve mulls differ therefore from plaster mulls in not having a gutta-percha backing, the mass is made without caoutchouc, it melts more readily, and is applied to the mull in a melted condition.

The most suitable base for preparing salve mulls is a mixture of suet and lard, in variable proportions, with the occasional addition of wax or lead plaster, this depending on the nature of the medicinal component or the intended use. The following formulas may serve as examples:

I. Zinc Salve Mull (10 per cent.):

Zinc oxid	part 1
Benzoinated lard	parts 2
Benzoinated suet	parts 7

II. Salicylic Acid Salve Mull (10 per cent.):

Salicylic acid	part 1
Benzoinated lard	part 1
Benzoinated suet	parts 8

III. Corrosive Mercuric Chlorid Salve Mull (2/10 per cent.):

Mercuric chlorid	parts 2
Alcohol	parts 50
Benzoinated lard	parts 50
Benzoinated suet	parts 900

IV. Creosote-Salicylic Acid Salve Mull (20:10 per cent.):

Salicylic acid	parts 10
Creosote	parts 20
Yellow wax	parts 5
Benzoinated suet	parts 65

Oakum, Medicated.

Medicated oakum is sometimes used as a surgical dressing instead of cotton. It is somewhat cheaper than jute and much cheaper than cotton. Carbolated (5 per cent.) and mercuric chlorid (1:1000) oakums are used mostly. These may be prepared like the corresponding jutes. See Jutes.

Oil of Amber. (Oleum Succini.)

I. Crude oil of amber (U. S. P. 1850):

Mix amber in powder with an equal weight of sand, introduce into a glass retort or flask, which is to be only half filled, then distil on a sand bath, with a gradually increasing heat. The distillate will separate into an acid liquid, an oil, and a concrete acid impregnated with oil. The oil is to be separated from the other matters and kept in well-stoppered bottles.

II. Rectified oil of amber (U. S. P. 1870):

Crude oil of amber	pint 1
Water	pints 6

Mix in a glass retort or flask, and distil until 4 pints of water have passed with the oil into the receiver; then separate the oil from the water and preserve in a well-stoppered bottle.

There is probably but little genuine oil of amber on the market and those requiring a true oil should prepare it themselves.

Oil, Angleworm.

Angleworms, freed from adherent dirt	part 1
Olive or other bland fixed oil	parts 2

Macerate for three days in a warm place, then strain or filter.

Presumably cottonseed or lard or other bland fixed oil to which a very small amount of Dippel's animal oil has been added will serve equally well.

Oil of Ants. (Ameisen Oel.)

Raw linseed oil, also spirit of formic acid are dispensed for this.

Oil of Arnica, Infused.

Prepare like the infused oils (see Oils, Infused), but using $1\frac{3}{4}$ av. ounces of cut arnica flowers for the herb and adding to the flowers 75 grains of coarsely powdered turmeric root.—D. modified.

Oil, Baunscheidt. (Compound Oil of Euphorbium.)

Baunscheidt was a German charlatan who claimed to cure rheumatic and other diseases by means of what he called a "lebenswecker," i. e., "awakener" or "revulseur." This consists of a number of sharp-pointed needles set in a bed of hard rubber. By means of a spiral spring arrangement these needles are driven into the skin over the seat of pain, not deep enough to draw blood, while into the wounds produced is rubbed the "Baunscheidt oil." This is an irritating substance and produces papular eruptions similar to those produced by croton oil. The effect is that of a powerful counter-irritant. In medicine this treatment is known as acupuncture. Formulas for the oil are as follows:

I.

Cantharides, powder	gr. 48
Euphorbium powder	gr. 80
Olive or cottonseed oil	fl.oz. 4

—H. modified.

Macerate for 7 days and filter.

II.

Cantharides, powder	gr. 12
Euphorbium, powder	gr. 64
Mezereum, cut fine	gr. 128
Alcohol, absolute	fl.dr. 4
Ether	fl.dr. 6
Olive or cottonseed oil	fl.oz. 4

Mix the two powders, alcohol and ether in a closed vessel, macerate for about 3 days, agitating occasionally; then add the oil, macerate again for about 3 days, strain, heat the colature gently so as to expel the ether, and filter.—H. modified.

III.

Croton oil	fl.dr. 1
Cantharidal oil	fl.oz. 1½
Olive or cottonseed oil.....	fl.oz. 2½

—D. modified.

Oil of Belladonna, Infused.

Prepare from belladonna leaves by the process under Oils, Infused, which see.

Oil, British. (Oleum or Linimentum Britannicum.—Oil of Stone.)

There are many formulas for this preparation. Originally oil of stone was natural rock oil or petroleum and many formulas for imitations of this article were in vogue, in former days when it was scarce, expensive and reputed to possess great medical virtues. The formulas for British oil were similar and gradually the two names became to be considered synonymous.

When oil of stone is asked for, it may, however, sometimes be the crude petroleum which is desired instead of the mixture known as British oil.

The following are the principal formulas for British oil:

I. Cooley:

Oil of turpentine	fl.oz. 4
Barbadoes tar	fl.oz. 2
Oil of rosemary.....	fl.dr. 1
Oil of origanum.....	fl.dr. 1

II. Formula of Philadelphia College of Pharmacy:

Oil of turpentine.....	fl.oz. 4
Linseed oil, raw.....	fl.oz. 2
Oil of amber.....	fl.oz. 1
Oil of juniper.....	fl.oz. 1
Barbadoes tar	fl.dr. 6
American petroleum	fl.dr. 2

III. Parrish's modification of No. II:

Oil of turpentine.....	fl.dr. 4
Linseed oil	fl.oz. 6
Oil of amber.....	fl.oz. 2
Oil of juniper.....	m. 30
Barbadoes tar	fl.dr. 2
Crude petroleum	fl.dr. 2

IV. This mixture has been recommended for oil of stone:

American petroleum	volume 1
Barbadoes tar	volume 1
Oil of turpentine.....	volumes 3

Oil of Cade, Factitious. (Empyreumatic Oil of Juniper.)

While oil of cade as such is commer-

cially available and should be used in prescriptions when demanded, there is also a factitious article used for veterinary applications which is said to be prepared as follows:

Pine tar	av.oz. 1¾
Oil of juniper wood.....	fl.oz. 7
Olive or other similar fixed oil	fl.oz. 7
Gum benzoin, coarse powder.....	gr. 80

Melt together by the aid of a gentle heat, and strain.

Oil, Calendula. (Infused Oil of Calendula—Calendulated Oil.)

Beringer's formula:

Calendula flowers, con-	
tused	av.oz. 1
Ammonia water	m. 10
Alcohol	fl.dr. 6
Olive oil, pure.....	av.oz. 1

Moisten the flowers with the mixed ammonia and alcohol, place in a suitable container, add the oil, macerate for about 4 days at a temperature of 50 to 70 deg. C. with frequent agitation, express and filter.

Oil, Cantharidal or Cantharides.

Cantharides, powder	av.oz. 3
Olive oil, yellow.....	av.oz. 10

Mix, heat for 10 hours on a boiling water bath, express and filter.—Germ. Pharm.

Cottonseed oil may be substituted for the olive oil.

Oil, Carbolized.

Carbolic acid, crystal.....	part 1
Cottonseed oil	parts 19

Parts are by weight.

Melt the acid with a gentle heat, and mix it with the oil.—N. F.

The carbolized oil of the Germ. Form. is made from 1 part of oil to 49 of olive oil.

Oil, Carminative. (Colic Oil.)

Oil of spearmint.....	fl.dr. 5
Oil of caraway.....	fl.dr. 2½
Oil of cumin.....	fl.dr. 2½
Oil of fennel	fl.dr. 2½
Infused oil of chamomile,	
to make	fl.oz. 16

This is what is desired by Scandinavians when green oil is asked for, but

Germans understand by this title the infused oil of henbane.

Oil of Chamomile, Infused.

This may be like any of the infused oils, using German chamomile flowers, whole, and omitting the ammonia water. See Oils, Infused.

Oil, Chloroform.

Chloroformpart 1
Olive oilpart 1
Parts are by weight.—Germ. Pharm.

Oil, Cod-Liver, Aromatized or Palatable.

I.
Oil of lemon.....drops 50
Oil of nerolidrops 20
Oil of peppermintdrops 10
Vanillingr. 1
Coumaringr. 1/10
Cod liver oilfl.oz. 16
Dissolve the coumarin and vanillin in the volatile oils, with the aid of a very gentle heat, and mix the solution with the cod liver oil.—D.

II. Cod liver oil may also be made palatable by adding to a pint 2 or 3 fluidrams of a 1 in 10 solution of saccharin in acetic ether. Volatile oil such as peppermint, cinnamon, wintergreen, etc., may also be added.

III. Pavesi's formula:

Cod liver oil.....fl.oz. 16
Roasted coffee, powder...av.oz. 3/4
Animal charcoalav.oz. 1/2

Place in a well-closed flask, digest on a water bath for one hour, then set aside for 3 days, and filter.—H.

IV.

Cod liver oilfl.oz. 16
Oil of peppermint.....drops 4
Oil of anise.....drops 8
Chloroformdrops 20
—H.

V. See also Emulsion of Cod Liver Oil.

Oil, Cod-Liver, with Iodin. (Iodized Cod-Liver Oil.)

Iodingr. 8
Chloroformm. 10
Cod liver oilfl.oz. 16

Triturate the iodine with a few drops of oil, then add more of the oil and the chloroform, mix this with the remainder

of the oil contained in a bottle, and agitate frequently until dissolved.—D. modified.

See also Oil, Iodized.

The iodized cod liver oil of the Germ. Form. is made from 1 part of iodine and 1000 of oil (same strength as the above), triturating the iodine with some of the oil, and then agitating frequently until the iodine is dissolved.

Oil, Cod Liver, with Iron. (Ferrated Cod Liver Oil.)

I.

Iron benzoategr. 70
Cod liver oil.....fl.oz. 16

Triturate the iron salt with the oil and warm gently until the former is dissolved.

The product contains 1 per cent. of the iron salt.—Germ. Form.

II.

Medicinal soapgr. 60
Solution of iron oxychlorid.fl.oz. 2
Distilled watersufficient
Sodium chloridgr. 90
Cod liver oilfl.oz. 16

Dissolve the soap in 2 fluidounces of water by the aid of heat, also mix the iron solution with 2 fluidounces of water, add the latter liquid gradually to the soap solution (when cold), stirring constantly. Collect the precipitate without washing; place between folds of filter paper until tolerably dry, or weighing about 350 grains, place in a porcelain or enameled iron evaporating dish with the salt and oil, heat on a water bath until solution takes place, and filter. The object of the salt is to abstract water from the iron compound and thus facilitate its solution in the oil.—D.

This contains about 1/2 per cent. of ferric oleate. It may be made stronger by using proportionately more of the soap, iron solution and water.

The iron oleate may also be prepared from solution of iron tersulfate and solution of sodium oleate (castile soap).

III.

Ferris chlorid, sublimed.....gr. 68
Cod liver oilfl.oz. 16

Dissolve the chlorid by triturating in a mortar with the oil gradually added, then filter.

Ferric chlorid when perfectly anhydrous as it is when sublimed and kept in well-closed bottles is soluble in the oil.

Oil, Cod Liver, with Iron Iodid. (Ferro-Iodized or Iodo-Ferrated Cod-Liver Oil.)

Iodin	gr.	30
Reduced iron	gr.	15
Stronger ether	m.	110
Cod liver oil, to make....	av.oz.	16

Triturate the iodine, iron and 1 fluidounce of oil in a mortar with the ether until a black mixture results and the iodine and iron have combined; then add the remainder of the oil, let stand for several days, and filter.

The product contains about $\frac{1}{2}$ per cent. of ferrous iodid.—D.

Oil, Cod Liver, with Malt Extract.

Oil, Cod Liver, Malted.

For cod liver oil with malt extract, see Extract of Malt with Cod Liver Oil.

Oil, Cod Liver, with Phosphorus. (Phosphorized or Phosphorated Cod Liver Oil.)

This may be made by dissolving 1 gr. of phosphorus in 16 fluidounces of cod liver oil by the aid of a gentle heat on a water bath, agitating frequently.

This preparation may also be conveniently prepared by mixing 2 fluidrams of phosphorated oil with 16 fluidounces of cod liver oil.

Oil, Cod Liver, with Quinine.

This may be prepared by dissolving 64 grains of dry quinine alkaloid in a small amount of pure oleic acid by the aid of a gentle heat, and add enough cod liver oil to make 16 fluidounces.

Of course, a ready-prepared quinine oleate may be added directly to the oil.

Oil of Conium, Infused.

This is prepared like the infused oils, using conium herb. See Oils, Infused.

Oil, Eel, Factitious.

See Lards, Factitious.

Oil of Eggs.

This is obtained by subjecting hard-boiled yolk of eggs to pressure, or by extracting hard-boiled yolks with carbon disulfid. About 1 fluidounce of oil is thus obtained from 16 yolks.

The oil deteriorates very readily and must be preserved in dram-vials in a cool, dark place.

A factitious article may be prepared as follows:

Olive or cottonseed oil....	fl.oz.	13 $\frac{1}{2}$
Cocoa butter	av.oz.	2 $\frac{1}{2}$
Yellow wax	av.oz.	$\frac{1}{2}$

Melt together on a water bath.—H.

It may often be replaced by olive, sweet almond, cottonseed or other similar bland fixed oil.

Oil, Ethereal. (Oleum Aethereum.—Oil of Wine.)

Alcohol	fl.oz.	32
Sulfuric acid, U. S. P....	fl.oz.	32
Distilled water	fl.dr.	6 $\frac{1}{2}$
Ether, stronger		sufficient

Add the acid slowly to the alcohol, mix them thoroughly, and allow the mixture to stand, in a closed flask, for 24 hours, or until the liquid is clear; then pour the liquid into a tubulated retort of such capacity that the liquid shall nearly fill it. Insert a thermometer through the tubulure, so that the bulb shall be deeply immersed in the liquid and having connected the retort with a well-cooled condenser and also having connected with the receiver a bent glass tube for conducting the uncondensed gases into water, distil, by means of a sand bath at a temperature between 150 and 160 deg. C. until only drops cease to come over, or until a black froth, which forms on the surface, begins to rise in the retort. Separate the yellow ethereal liquid from the distillate and expose it to the air, for 24 hours, in a shallow dish. Then transfer it to a wet filter, and, when the watery portion has drained off, wash the oil which is left on the filter with the distilled water which should be as cold as possible. When this also has drained off, mix the

remaining oil with an equal volume of stronger ether.

The oily liquid obtained is what is known as heavy oil of wine, so that ethereal oil is a mixture of equal volumes of heavy oil of wine and stronger ether.

The product should be preserved in small glass-stoppered bottles in a cool place.—U. S. P.

Ethereal oil of the market is frequently known as heavy oil of wine but of course should not be confused with the true heavy oil of wine, which is also obtainable. The commercial ethereal oil can be had at almost any price and probably consists of heavy oil of wine diluted with more or less ether or alcohol or both to suit the ideas of intending purchasers. As the average yield of oil is about 2 to 2½ per cent. of the alcohol used, it follows that the oil cannot but be an expensive article. It is used pharmaceutically only in the making of compound spirit of ether.

Oil, Felon or Secretive. (Malefiz or Ausscheidungs Oel.)

Kneipp's:

Croton oilpart 1
Sweet almond oilparts 6

Oil of Gladness.

This mixture is used in some parts of this country under the above name:

Oil of sweet marjoram.....fl.dr. 1
Oil of peppermint.....fl.dr. 1
Oil of horsemint.....fl.dr. 1
Tincture of opium.....fl.dr. 1
Tincture of capsicum.....fl.dr. 4
Etherfl.dr. 2
Alcohol, to make.....fl.oz. 8
Red sounders, ground.....gr. 10

Mix, macerate for several days and filter.

Oil, Goose.

See Lards, Factitious.

Oil, Gray. (Oleum Cinereum.)

This is a fluid form of mercurial ointment employed by Prof. Lang of Vienna for subcutaneous injection. There are two strengths, a strong and a mild, one prepared from a strong, the other from a weak, special mercurial ointment.

The strong oil is prepared from 9 parts by weight of the strong gray ointment and 4 of olive oil, mixing thoroughly. It contains nearly 50 per cent. of metallic mercury, and is injected in quantities of 0.1 cc.

The weak oil is prepared from 6 parts by weight of mild gray ointment and 4 of olive oil, mixing thoroughly. It contains 30 p. c. of metallic mercury, and is injected in quantities of 0.1 cc.

The strong "gray lanolin ointment" is prepared from 1 av. ounce of anhydrous wool fat, 2 av. ounces of metallic mercury, and about 2 to 2½ fluidounces of chloroform. The fat and mercury are to be triturated together in a capacious mortar, gradually adding chloroform, until the mercury is well extinguished. Then continue trituration till the chloroform has dissipated.

The weak ointment is prepared in the same manner from 1 av. ounce each of anhydrous wool fat and metallic mercury and about 10 to 12 fluidrams of chloroform.

The strong gray oil may be made directly from the metal by mixing 6 parts by weight of it with 3 of anhydrous wool fat and 4 of olive oil; the weak gray oil from 3 each of metallic mercury and anhydrous wool fat and 4 of olive oil. The metal should be triturated with the fat until extinguished, then incorporated with the oil.

Oil, Green.

Dispense either carminative oil or infused oil of henbane. See Oil Carminative and Oil of Henbane, Infused. Sometimes simply the so-called Malaga olive oil is dispensed.

Oil, Green Wonder.

This is said to be used in some parts of this country:

Venice turpentineav.oz. 4
Zinc sulfate, fine powder.....gr. 15
Copper acetate, fine powderav.oz. 1½
Peru balsamlb. 60
Linseed oillb. 1
Olive oillb. 1

Warm the two oils, add the turpen-

tine, then the other ingredients, and stir until cold.

This is used for scalds, burns, wounds and piles.

Oil, Haarlem. (*Medicamentum.—Dutch Drops.—Tilly Drops.—Haarlem Balsam.—Dutch or Holland Balsam or Drops.—Silver Balsam or Drops.—Batavia Empyreumatic Oil.*)

I. Hager states that the original Batavian empyreumatic oil was sold as Haarlem oil. It was prepared by the dry distillation of 5 parts each of aloes and myrrh, 2 of olibanum and 50 of olive oil.

The preparation current in this country is not made according to the above but always contains balsam of sulfur and oil of turpentine, similar to Nos. II and III.

II.

Balsam of sulfur, from linseed oilpart 1
Oil of turpentine.....parts 3
—H.

III.

Balsam of sulfur, from linseed oilpart 1
Oil of turpentineparts 2
Oil of cadeparts 4
—H.

IV. The following formula is an American variation:

Balsam of sulfur.....fl.oz. 3
Barbadoes petroleumfl.oz. 1
Oil of amber, crude.....fl.oz. 1½
Oil of turpentine.....fl.oz. 8
Linseed oil, raw.....fl.oz. 4

Oil of Henbane, Infused. (*Oleum Hyoscyami Coctum.—Oil of Hyoscyamus.—Groen Olje.*)

I. This may be prepared from henbane leaves according to the process given under Oils, Infused.

II.

Henbane leaves, cut moderately fineav.oz. 1
Alcoholfl.dr. 7
Olive oilav.oz. 10

Moisten the leaves with the alcohol, keep in a closed vessel, for several hours, add the oil, heat on a water bath

until the alcohol has dissipated, express, and filter.—Germ. Pharm.

Oil of Henbane, Compound. (*Compound Oil of Hyoscyamus.—Balsamum Tranquillans.—Baume Tranquille.*)

Oil of wormwood.....drops 5
Oil of lavender flowers.....drops 5
Oil of rosemarydrops 5
Oil of sage.....drops 5
Oil of thyme, white.....drops 5
Infused oil of henbane.....fl.oz. 8

The Baume Tranquille (*Balsamum tranquillans*) of the Codex is a more complex preparation, not identical with the above, but possessing about the same properties.—N. F.

Oils, Infused. (*Olea Cocta or Infusa.*)

The following is the general process of the N. F. for preparing the so-called infused oils, such as oil of hyoscyamus, oil of chamomile, etc.:

The dry herb, moderately coarse (No. 40) powder.....av.oz. ¾
Alcoholfl.oz. 3
Ammonia water, 10 p. c.....m. 30
Lard oilav.oz. 8
Cottonseed oilav.oz. 8

Moisten the powdered herb with a sufficient quantity of the alcohol and ammonia water previously mixed, then pack it tightly into a stone or enamelled iron vessel of suitable capacity, pour on the remainder of the ammoniated alcohol, cover it well, and allow the mixture to macerate for 24 hours. Then add 2 av.ounces of the mixed oils, digest, under frequent agitation, during 12 hours, at a temperature between 50 and 60 deg. C., transfer the mixture to a strainer, and express strongly. To the residue, returned to the vessel, add the remainder of the oils, digest and express in the same manner, and unite the expressed portions.

This process is a modification of that prescribed by the Germ. Pharm. The alcohol and free ammonia are dissipated during the digestion. Infused oils are usually prepared usually from so-called narcotic plants, but it is known that only a portion of their active constituents is taken up by the oil.

Oil, Iodized.

A ready method of incorporating iodine with oils is the following:

Iodin	gr. 20
Sodium iodid.....	gr. 5
Glycerin, about	drops 5

Triturate thoroughly and incorporate the requisite amount of oil.

Oil of Joy.

This is said to be used in some parts of this country under the above name:

Oil of sassafras.....	fl.dr. 1
Oil of cedar.....	fl.dr. 1
Chloroform	fl.dr. 3
Camphor	gr. 30
Tincture of quaiac.....	fl.dr. 1
Tincture of capsicum.....	fl.dr. 2
Ammonia water	fl.dr. 4
Alcohol	fl.oz. 8

Oil, Lily.

A preparation which may be sold under this name is the following:

Cottonseed oil, bleached....	fl.oz. 16
Oil of bergamot.....	drops 16

Oil of Origanum.

The so-called pure oil of origanum is the red or unpurified oil of thyme (*Thymus vulgaris*). The so-called commercial oil of origanum is the pure oil mixed with oil of turpentine.

Oil, Paraffin. (Liquid Petrolatum or Petrolatum Oil.)

See Paraffin.

Oil, Phosphorated.

I.

Phosphorus	gr. 22
Sweet almond oil, stronger	
ether, each	sufficient

Introduce a quantity of the oil into a flask, heat it on a sand bath to 250 deg. C., keep it at that temperature for 15 minutes, then allow it to cool, and filter it. Put $4\frac{1}{2}$ av.ounces of the filtered oil together with the phosphorus, previously well dried with filtering or blotting paper, into a dry, tared bottle capable of holding about 6 fluidounces, insert the stopper, and heat the bottle in a water bath until the phosphorus is completely melted (occasionally opening the bottle to allow the expanded air to escape). Then agitate it until

the phosphorus is dissolved, allow it to cool, add enough stronger ether to make the mixture weigh 5 av.ounces, and shake again. Lastly, transfer the solution to small glass-stoppered vials, which should be completely filled and kept in a cool and dark place.—N. F. Appendix and U. S. P. 1890.

The preliminary heating of the oil is to coagulate albuminous matter which fixed oils contain, also to expel air and traces of water.

The ether assists in preservation of the product as well as to render it less disagreeable to the taste.

The phosphorus used should be in translucent pieces.

The product contains 1 per cent. by weight of phosphorus, or slightly over $\frac{1}{2}$ gr. in a fluidram. It should be free from any undissolved phosphorus.

II.

Heat sweet almond oil in a porcelain dish to about 150 deg. C. and keep it at this temperature for about 15 minutes, then let it cool, and filter through paper. Put 99 parts by weight into a stoppered bottle capable of holding rather more than this amount, and add to it one part by weight of dry phosphorus. Immerse the bottle in hot water until the mixture has acquired the temperature of 82 deg. C., removing the stopper two or three times to allow the escape of expanded air; then shake until the phosphorus is entirely dissolved.

The proportion of phosphorus to oil is 18 grains of the former to 4 av.ounces of the latter.—Brit. Pharm.

Oil of Pumpkin Seed.

Pumpkin seed	av.oz. 2
Ether	av.oz. 2

Beat the seeds in a mortar until thoroughly broken, then add the ether in small portions at a time, rubbing until well mixed; transfer to a bottle, cork well, and let stand 10 hours; then change to a small funnel or percolator, and pass enough ether through the mass to obtain 2 av.ounces of percolate; al-

low it to evaporate in a current of air until it has lost the odor of ether.

This is used to expel tapeworm, $\frac{1}{2}$ ounce being a dose, to be repeated in 2 hours, then followed in 4 hours with castor oil to which 30 to 60 drops of ether may be added.—Eclectic.

Oil, Rainworm, Artificial. (Regenwurm Oel.)

The following are used:

- I.
Oil of birch tar.....part 1
Rapeseed oil, crude, to
makeparts 25
—H.

- II.
Linseed oil, raw.....parts 49
Animal oilpart 1

- III.
Animal oilparts 2
Petroleumparts 5
Rapeseed or other neutral
fixed oilparts 150

- IV.
Cottonseed or other neutral
fixed oil, colored with al-
kanet root.

- V.
Raw linseed oil.

Oil of Rhodium. (Oil of Duty.)

True oil of rhodium is distilled from the roots of *Convolvulus Scoparius* and other species. There are, however, a number of mixtures parading under the name oil of rhodium which are used as baits by rat-catchers, fishermen, and others. Among these mixtures are the following:

- I.
Oil of rose.....fl.dr. 1
Oil of copaiba.....fl.oz. $2\frac{1}{2}$

- II.
Oil of rose.....drops 20
Sweet almond oil.....fl.oz. 1
Balsam of copaiba.....fl.oz. 1

- III.
Oil of rose.....fl.dr. 1
Oil of sandalwood.....fl.oz. $2\frac{1}{2}$

- IV.
Oil of rose.....fl.dr. 1
Sweet almond oil.....fl.oz. 2
Oil of sandalwood.....fl.dr. 4
Probably in many instances the oil of

rose in the above formulas is replaced wholly or in part by oil of rose geranium.

Oil, Rue.

Kneipp's:

This is prepared from the leaves like infused oil of henbane. See Oils, Infused.

Oil, Sage.

Kneipp's:

This is prepared from the leaves like infused oil of henbane. See Oils, Infused.

Oil, Skunk.

See Lards, Factitious.

Oil of Spike.

True oil of spike is a distillate of the spike lavender plant. The commercial oil of spike which is used so largely for veterinary purposes is, however, a very different article, mixtures of various kinds being used. The most common mixture is Barbadoes tar with about 3 times its volume of oil of turpentine. Sometimes some raw linseed oil is added, also a small amount of crude oil of amber or oil of hemlock is added to partially modify the odor of the turpentine. Another mixture which has been suggested is a mixture of 1 fluidounce of amber oil, 2 fluidounces of Barbadoes tar and 16 each of linseed and turpentine oils.

Oil, St. Johnswort.

Kneipp's:

This is prepared from the leaves like infused oil of henbane. See Oils, Infused.

Oil of Stone.

See Oil, British.

Oil of Stramonium, Infused.

This is to be prepared from stramonium leaves according to the process given under Oils, Infused, which see.

Oil of Turpentine, Rectified.

Oil of turpentine.....a convenient quantity.

Solution of sodium hy-
dratesufficient

Shake the oil thoroughly with an

equal volume of the solution, introduce the mixture into a copper still connected with a well-cooled condenser, then distil until about three-fourths of the oil has passed over, and separate the clear oil from the mixture of oil and water in the distillate.

The product should be kept in well-stoppered bottles, in a cool place, protected from light.—U. S. P.

The above should always be dispensed when oil of turpentine is required for internal use.

In the Germ. Pharm. and the U. S. P. 1890, this preparation is made by distillation of the oil with 6 volumes of lime water.

Oils, White.

See Liniment, Turpentine, Acetic.

Oil of Wormwood, Infused.

Prepare like the infused oils. See Oils, Infused.

Oil-Sugars. (Oleossacharates—Oleosacchara—Elæossachara.)

The general process of the N. F. for oil-sugars is as follows:

Any volatile oil.....drop 1
Sugargr. 30

Triturate the sugar with the oil to a fine powder.

This preparation should be freshly made when wanted for use.

When Elæosaccharum Anisi, E. Fœniculi, E. Menthæ Piperiæ, etc., etc., are prescribed, these are to be prepared from the corresponding essential oils, according to the above formula.

The Germ. Pharm. directs the proportions of 1 part by weight of oil to 50 of sugar and directs 25 drops of oil to be considered equal to 1 grain of oil. But inasmuch as these preparations are used only as adjuvants, the above more convenient formula may always be employed.

The Dan. and Norw. Pharms. direct 1 part of oil and 49 of sugar.

Ointments. (Unguenta.)

These are mixtures of fatty or fatty and wax bodies, or these combined with

other solid or medicinal substances. They are softer than cerates and are intended for rubbing (inunction) into the skin.

Ointment of Aconite.

Extract of aconite leaves....part 1

Lardparts 2

Soften the extract with water or diluted alcohol and mix well with the lard.—Eclectic.

Ointment, Aconitine.

Aconitinegr. 10

Oleic acid, pure.....gr. 80

Lardgr. 410

Rub the aconitine with the acid and gently warm the mixture until dissolved, then incorporate the lard.—Brit. Pharm.

Ointment, Alkaline.

Sodium carbonategr. 120

Tincture of opium.....fl.dr. 1

Lardav.oz. 1

Triturate the sodium salt to an impalpable powder, mix with the lard, and then add the tincture.—Eclectic.

Ointment, Alkaline, Camphorated.

Potassium carbonategr. 20

Camphor, powdergr. 6

Lardgr. 420

Warm the lard, add the camphor, stir well till dissolved, and mix the potassium carbonate.—Eclectic.

Ointment of Aluminum Acetate.

Unna's:

Simple ointmentav.oz. 1

Wool fat, hydrous.....av.oz. 2

Solution of aluminum acetateav.oz. 4

(about fl.dr. 30)

Mix the ointment and fat, and gradually incorporate the solution.—D.

Ointment, Ammoniacal. (Gondrat's Pomade.)

Lardgr. 240

Suetgr. 160

Sweet almond oil.....m. 80

Stronger water of ammonia
(28 per cent. or concentrated)fl.oz. 1

Melt the lard and suet together, add the oil, and when the mixture is tolerably cool, pour it into a wide-mouthed bottle, add the ammonia water, cork

well, and shake occasionally until cold.—Eclectic.

This is a slight modification of the formula of the Codex which directs 1 part each of suet and lard, then add 2 parts of ammonia water, sp. gr. 0.920.

This is used as a rubefacient and vesicant.

Ointment of Ammoniated Mercury.
(Ointment of White Precipitate—
Unguentum Hydrargyri Album
—Weisse Quecksilber Salbe.)

Ammoniated mercury (white precipitate)part 1
White petrolatumparts 5
Wool-fat, hydrousparts 4

Rub the ammoniated mercury to a perfectly smooth paste with about an equal weight of melted white petrolatum, then add the remainder of the petrolatum melted and the wool-fat and stir the mixture until it congeals.—U. S. P.

The Brit. and Germ. Pharms. direct the use of paraffin ointment as the vehicle.

Ointment, Antimonial. (Tartar Emetic Ointment—Ointment of Tartarated Antimony—Unguentum Stibiatum—Autenrieth's Ointment.)

Tartar emetic, very fine powdergr. 100
Lardgr. 400
—U. S. P. 1870.

The Brit. Pharm. 1885 (not in 1898) directs simple ointment instead of lard.

The Germ. Pharm. directs paraffin ointment instead of lard.

No water should be employed in making this ointment.

Ointment, Astringent.

Mutton suetlb. 1
Witch-hazel or sumach leaves..oz. 2

Melt the suet, boil with the leaves for one-half hour and strain.—Thomsonian (from Comfort's Practice).

Ointment, Atropine.

Atropinegr. 10
Oleic acid, pure.....gr. 40
Lardgr. 450

Triturate the atropine with the acid and gently warm the mixture until dis-

solved, then incorporate the lard.—Brit. Pharm. and Eclectic.

Ointment, Bayberry.

Bayberry plasterav.oz. 4
Olive oilfl.oz. 1

Melt the plaster, add the oil, and stir until cool.—Eclectic.

This may also be prepared from:

Bayberry waxav.oz. 2
Gum turpentineav.oz. 2
Olive oilfl.oz. 1

Ointment of Bayberry, Compound.

Bayberry waxav.oz. 1
Sweet gumav.oz. 1
Suetav.oz. 2
—Eclectic.

Ointment of Bearsfoot. (Ointment of Polymnia.)

Polymnia, fresh root.....part 1
Lard or mutton suet.....parts 2

Cut the root into small pieces, add the fat, heat the mixture until water ceases to evaporate, and strain while hot.—Eclectic.

Another Eclectic formula for this preparation is the following:

Fluid extract of bearsfoot..av.oz. 1
Lardav.oz. 2

Heat together until vapors cease to escape.

Ointment of Belladonna.

I.

Extract of belladonna leaves.av.oz. ½
Diluted alcoholfl.dr. 2
Wool fat, hydrous.....av.oz. 1
Benzoinated lardav.oz. 3½

Triturate the extract with the diluted alcohol until a smooth mixture is obtained, with this incorporate the wool fat, and then add the lard.—U. S. P.

II.

Fluid extract of belladonna root, Brit. Pharm.....fl.oz. 3
Benzoinated lardav.oz. 3

Evaporate the fluid extract on a water bath to ¾ av.ounce (165 grains), and then incorporate the lard.

1000 parts of this ointment should contain 6 parts of alkaloids of belladonna root.—Brit. Pharm.

Ointment, Black. (Black Salve.)

Thomsonian works directed this

"black salve," which was the same as "mother salve," but Thomson himself objected to its use. Instead of it, as an application to old sores and ulcers, he recommended beef's gall dried down to the consistence of ointment.

Ointment, Blue. (*Mercurial Ointment, Diluted or Milder*—Gray or *Neapolitan Ointment*—Franzosen, Reuter or *Material Salbe*.)

Mix 2 parts of mercurial ointment (U. S. P. or 50 p. c.) with 1 part of petrolatum.—U. S. P.

The product contains, therefore, $33\frac{1}{3}$ per cent. of metallic mercury.

The preparation of the Brit. Form. is made from 1 part of mercurial ointment (Brit. Pharm.) and 2 parts of lard. The product contains approximately 16 per cent. of mercury.

Ointment of Boric Acid. (*Boric Ointment*.)

I.

Boric acid, fine powder.....part 1
Paraffinpart 1
White petrolatumparts 8

Melt the paraffin, add the petrolatum and heat gently for 10 minutes; then add the hot liquid to the acid, contained in a warm mortar, triturating thoroughly, and stir the mixture until it congeals.—U. S. P.

In the Brit. and Germ. Pharms., this is made from 1 part of boric acid and 9 parts of paraffin ointment.

II. Lister's formula:

Boric acid, fine powder.....part 1
White waxpart 1
Paraffinparts 2
Sweet almond oil.....parts 2
Triturate the acid to a smooth paste

with a portion of the oil, melt the paraffin, wax and remainder of the oil together and add the previous mixture.

Ointment, Brown. (*Mother's Salve*—*Unguentum Fuscum*—*Unguentum Matris*—*Mutter Salbe*.)

Camphorated brown plaster.av.oz. 2
Olive oilav.oz. 1
Suetav.oz. 1

Melt them together, and stir the mass until it is cold.—N. F.

Cottonseed or other bland fixed oil

could be substituted for the olive oil.

Ointment, Burn.

Melt yellow wax and burgundy pitch together (no quantities given) and add enough sweet oil to make an ointment.—Thomsonian (from the *Materia Medica*).

Ointment, Calamine. (*Unguentum Zinci Carbonatis Impuri*—*Unguentum Calaminare* or *Calaminæ*—*Turner's Cerate*—*Ointment of Zinc Carbonate*.)

I.

Prepared calaminepart 1
Simple ointmentparts 5

Mix them intimately, by trituration, so as to produce a smooth and homogeneous ointment.—N. F.

II. The calamine ointment of the Brit. Pharm. 1885 (not in 1898) was made with benzoinated lard instead of simple ointment.

III. Rademacher's formula for calamine ointment:

Camphor, powdergr. 55
Lithargeav.oz. 1
Armenian boleav.oz. 1
Lead carbonateav.oz. 1
Calamine, preparedav.oz. 1
Yellow waxav.oz. $1\frac{1}{2}$
Lardav.oz. 6

Mix the litharge, lead carbonate, bole and calamine to a smooth paste with a portion of the lard, also melt the wax, to it add the remainder of the lard, add the previous mixture, mix the whole thoroughly, add the camphor and stir occasionally until solid.—D. and H.

Ointment, Calendula. (*Calendulated Ointment*.)

I. Beringer's (said to be similar to the homeopathic preparation):

Yellow waxav.oz. $\frac{1}{4}$
Paraffinav.oz. $\frac{1}{4}$
Petrolatumav.oz. $4\frac{1}{4}$
Fluid extract of calendula
flowersfl.dr. 2
Extract of calendula.....part 1

II.

Diluted alcohol...sufficient to soften the extract.

Simple ointmentparts 9
—H.

III. It may also be prepared by digesting 1 av.ounce of calendula flowers in 9 av.ounces of simple ointment for about 2 hours, then expressing.

IV. Kneipp's:

Simple ointment impregnated with the flower and herb of calendula.

Ointment, Calomel.

Calomelpart 1
Benzoated lardparts 9
—Brit. Pharm.

Ointment, Camphor.

Camphor, coarse powder....parts 2
White waxpart 1
Lardparts 6

Melt the wax and lard with a gentle heat, then add the camphor, and stir the ointment until it is cold.—N. F.

Ointment, Cantharides or Cantharidal.

I.

Cantharides, bruisedpart 1
Benzoinated lardparts 10

Melt the lard, add the cantharides, digest at a temperature of about 50 deg. C. for 12 hours, strain through calico, press the residue gently, and stir until cold.—Brit. Pharm.

II.

Cantharides oilparts 3
Yellow waxparts 2

The Germ. Pharm. also recognizes a cantharidal ointment for veterinary use. See Ointment, Cantharides, Veterinary.—Germ. Pharm.

Ointment, Cantharides, Veterinary.

Cantharides, moderately fine powderav.oz. 3
Gum euphorbium, moderately fine powderav.oz. 1½
Soft turpentineav.oz. 3
Yellow waxav.oz. 1½
Olive oilav.oz. 3
Lardav.oz. 3

Mix the cantharides, oil and lard, heat on a water bath, and keep warm for 10 hours, stirring occasionally. add the wax and turpentine, and, when melted, remove from the water bath, add the euphorbium, and stir the mixture frequently until cold.—Germ. Pharm.

Ointment, Capsicum.

Capsicum pods, bruised.....gr. 120
Spermacetigr. 60
Olive oilav.oz. 1

Digest on a water bath for 1 hour, stirring occasionally, strain, and allow to cool without stirring.—Brit. Pharm.

See also Ointment of Oleoresin of Capsicum.

Ointment of Carbolic Acid. (Carbolic or Phenol Ointment.)

I.

Carbolic acid, crystal.....gr. 108
White petrolatumav.oz. 8

Melt the petrolatum, add the acid, and stir the mixture until it begins to congeal. The product contains 3 per cent. of acid—U. S. P.

This acid used for making this and other carbolic ointments should be the crystal acid itself or preferably this melted by aid of heat, and then should be added to the melted fat. On no account should an acid liquefied by the aid of alcohol, water, glycerin or other similar liquid be used, as this interferes with the solution of the acid.

In the U. S. P. 1890 this ointment contained 5 per cent. of acid and was made with simple ointment as the vehicle.

II.

Carbolic acid, crystal.....av.oz. ½
Glycerinav.oz. 1½
Paraffin ointmentav.oz. 10½

Dissolve the acid in the glycerin and incorporate with the ointment.—Brit. Pharm.

III. Lister's carbolic salve:

Carbolic acid, crystal.....av.oz. 1
Linseed oil, raw.....av.oz. 4
Prepared chalksufficient

Mix the acid and oil and add sufficient chalk to make a soft ointment.—D.

Ointment, Casein, Unna's.

Caseinav.oz. 2¼
Potassium hydrategr. 23
Sodium hydrategr. 5
Glycerinfl.oz. 1
Petrolatumgr. 150
Zinc oxidgr. 36
Carbolic acidgr. 36
Water, to make.....av.oz. 16

Prepare the casein as follows: Take milk from which the cream or fat has been entirely removed. curdle it by the addition of rennet essence, at a temperature of 30 to 40 degs. C.; collect the coagulum and wash with running water or otherwise until the washings are no longer acid; dry carefully and powder.

Dissolve the alkalies in a portion of the water, and in this solution dissolve the casein, add the glycerin and carbolic acid, incorporate the petrolatum and zinc oxid, and finally the remainder of the water.

This is recommended by Unna as a vehicle to be used instead of fatty bodies for inunction.

Ointment, Chaulmugra or Gynocardia.

Chaulmugra oilpart 1
Paraffin ointmentparts 3
Mix together in a mortar or on a tile.
—Eclectic.

Ointment, Chrysarobin.

Chrysarobingr. 92
Benzoinated lardav.oz. 4
Triturate the chrysarobin with the lard, previously melted, and heat the mixture on a water bath with occasional stirring for 20 minutes, then strain and stir until it congeals.—U. S. P.

The directions of the Brit. Pharm. are similar. Triturate 73 grains of chrysarobin with 4 av.ounces of benzoinated lard previously melted by heat; continue the heat until the chrysarobin is dissolved and stir until cold.

Ointment of Chrysarobin, Compound, Unna's.

Chrysarobingr. 200
Ichthyolgr. 200
Salicylic acidgr. 80
Petrolatumav.oz. 8
—H.

Ointment, Clay.

See Kneipp's Remedies.

Ointment, Cocaine.

Cocaine (alkaloid)gr. 20
Oleic acid, pure.....gr. 80
Lardgr. 400
Triturate the cocaine with the acid, gently warm the mixture till cocaine is

dissolved, and then incorporate the lard.
—Brit. Pharm.

Ointment of Coccus Indicis.

Kernels of coccus indicus..gr. 30
Lardgr. 150
Rub up the kernels in a mortar, first alone, then with a small portion of the lard, and gradually add the rest of the lard.

An ointment composed of 3 grains of picrotoxin and 144 grains of lard is sometimes used in place of the above.

Ointment, Conium. (Ointment of Poison Hemlock.)

I.
Extract of conium.....gr. 60
Lardav.oz. 1
Soften the extract with water or diluted alcohol and add the ointment.—Eclectic.

II.
Conium juicefl.oz. 11
Wool fat, hydrous.....av.oz. 4
Evaporate the juice, on a water bath at a temperature not over 60 deg. C., to one-eighth of its volume, then incorporate with the wool fat.—Brit. Pharm.

Ointment of Copper Subacetate. (Unguentum Æruginis or Apostolorum—Egyptian or Apostle Salve.)

Copper subacetate (verdigris)av.oz. 1½
Rosinav.oz. 1½
Yellow waxav.oz. 2
Lead plasterav.oz. 4
Olive oilav.oz. 9
Olibanum, finest powder....av.oz. 2

Melt the wax, plaster and rosin together and add 7½ av.ounces of the oil. Intimately mix the verdigris with the remaining oil to a smooth paste, add this mixture to the previous one, stir well, add the olibanum, and stir frequently until cool.—H.

Another ointment containing verdigris is what is known as green ointment. See Ointment, Green.

Ointment, Creosote.

Creosote, beechwoodav.oz. 1
Paraffinav.oz. 4
Petrolatum, whiteav.oz. 5
Melt the paraffin and petrolatum to-

gether, add the creosote, and stir until cold.—Brit. Pharm.

Ointment, Diachylon. (Lead Ointment—Hebra's Ointment—Hebra's Diachylon Ointment.)

I.

Lead plasterav.oz. 1
Olive oilfl.oz. 1
Oil of lavender flowers...drops 10

Melt the plaster by applying a gentle heat, add the olive oil, and mix thoroughly; then allow the mixture to cool, add the oil of lavender flowers, and stir the ointment until it congeals.—U. S. P.

The U. S. P. directs this ointment to be prepared as needed.

This ointment is readily decomposed in making it unless great care be exercised to apply only a gentle heat; and it is liable to spoil within a few days after making it. If even only slightly rancid, it will be unfit for use. If a soft grade of petrolatum be substituted for the olive oil in the above, the product will keep quite well and will be equally efficient.

II. When made according to the U. S. P. 1880, this ointment was more nearly like the preparation used by Prof. Hebra of Vienna. The U. S. P. 1880 formula was 60 parts of lead plaster, 39 of olive oil, and 1 of oil of lavender flowers, corresponding to 1 av.ounce of lead plaster, 5½ fluidrams of olive oil, and 10 drops of oil of lavender flowers.

III.

Lead plaster,
Olive oil, each..equal parts by weight

Melt together at a gentle heat, and stir until the mixture has concreted. After standing for several hours, again thoroughly stir the mixture.—Germ. Pharm.

This is the preparation recognized by the Germ. Pharm. under the name diachylon ointment. Lead ointment, Germ. Pharm., is a different preparation; see Ointment, Lead.

IV. Hebra's original directions are the following:

Lithargeav.oz. 4
Waterfl.oz. 1
Olive oilav.oz. 20
Oil of lavender flowers....fl.dr. 2

Mix the litharge with the water in a capacious vessel, add the olive oil, and heat over a naked flame, stirring constantly, until the reddish color has completely disappeared, from time to time adding a small amount of water to replace that lost by evaporation. Then heat the mixture on a water bath to evaporate the superfluous water. When the ointment no longer foams or effervesces, wash it repeatedly with warm water until the washings no longer have a sweet taste. Then beat the ointment so as to dissipate, as much as possible, the retained water. Finally incorporate the lavender oil.—D.

Preserve the ointment in not too large wide-mouthed bottles, in a cool place protected from daylight.

If quite free from water this ointment is said to keep tolerably well.

Ointment, Diabolic. (Unguentum Diabolicum.)

Potassium iodidgr. 25
Waterm. 20
Mercurial ointmentgr. 20
Wool fat, hydrous.....gr. 100
Lardgr. 280

Dissolve the iodid in the water and add the other ingredients.—H.

Ointment, Eucalyptus.

Oil of eucalyptus.....av.oz. 1
Paraffinav.oz. 4
Petrolatum, whiteav.oz. 5

Melt the paraffin and petrolatum together, add the oil and stir until cold.—Brit. Pharm.

Ointment, Fern.

Thomsonian (from the *Materia Medica*):

Take fresh leaves of meadow fern, balm of Gilead buds and gum myrrh, each, equal parts, simmer in fresh butter, and strain. Harden with bayberry wax and rosin.

Ointment of Figwort.

Figwort leaves, fresh.....av.oz. 4
Lardav.oz. 2
Suetav.oz. 1

Heat together until the leaves are crisp, then strain with expression.—Eclectic.

Ointment of Gallic Acid.

Gallic acidpart 1
Benzoinated lardparts 9

Rub the acid with the lard, gradually added, until they are thoroughly mixed, avoiding the use of an iron spatula.—N. F. and U. S. P. 1880.

Ointment, Green.

This is sometimes used under the above name:

Verdigris, fine powder.part 1
Resin cerateparts 15

Add the powder to the cerate, previously melted at a gentle heat, and stir until it concretes.

For another ointment containing verdigris, see Ointment of Copper Subacetate. Another green ointment is bayberry ointment. See Ointment, Bayberry.

Ointment, Healing. (Thomson's Salve—Thomson's Healing Salve.)

Thomsonian (from the Guide):

Yellow waxoz. 4
Salt butteroz. 4
White turpentineoz. 6
Balsam of fir.....oz. 3

Another formula mentions fresh butter instead of salt butter, and still another 2 ounces of turpentine.

Ointment of White Hellebore. (Ointment of Veratrum Album.)

White hellebore (veratrum album), powderav.oz. 1
Lardav.oz. 4
Oil of lemon.....m. 10
Mix well.—Eclectic.

Ointment of Hydrochloric Acid. (Ointment of Muriatic Acid.)

Hydrochloric acidfl.dr. 1
Spermaceti ointmentav.oz. 1

Melt the spermaceti at a gentle heat and incorporate the acid.—Eclectic.

Ointment, Ichthyol.

Unna's:

Ichthyolgr. 50
Waterm. 50
Lardgr. 150
Wool fat, hydrous.....gr. 250

Triturate the ichthyol with the water and add the other ingredients.—D.

Ointment, Ichthyol, Salicylated or Compound.

Unna's:

Ichthyolgr. 50
Salicylic acidgr. 10
Lardgr. 220
Wool fat, hydrous.....gr. 220

—D.

Ointment, Iod.

I.

Iodingr. 20
Potassium iodidgr. 20
Glyceringr. 60
Benzoinated lardgr. 400

Triturate the iodine and iodid in a glass mortar with the glycerin until dissolved, then gradually add the lard and mix thoroughly, avoiding the use of a metallic spatula.—U. S. P.

This should be freshly made when required.

II. The preparation of the Brit. Pharm. is made in the same manner.

III. Rademacher's:

Iodingr. 24
Alcoholsufficient
Lardgr. 450

Dissolve the iodine in a little alcohol and add the lard.

The product contains 5 per cent. of iodine.—H.

Ointment, Iodin, Compound.

This is very similar to the iodine ointment of the present U. S. P.:

Iodingr. 15
Potassium iodidgr. 30
Waterm. 30
Lardgr. 480

Rub the iodine and potassium iodid with the water until both are dissolved, then with the lard, gradually added, until well mixed.—U. S. P. 1870 and Eclectic.

Ointment, Iodoform.

Iodoformgr. 50
Lardgr. 450

Triturate the iodoform thoroughly with about twice its weight of lard, then gradually incorporate the remainder of the lard.

This preparation should be freshly made, when required.—U. S. P.

The disagreeable odor of the iodoform may be neutralized or overcome by adding a few drops of almost any volatile oil; oil of sassafras is very satisfactory.

The Brit. Pharm. uses yellow paraffin ointment instead of the lard.

Ointment of Ipecac.

Ipecac, fine powder.....gr. 120
Olive oilfl.dr. 2
Lardav.oz. ½
Mix well.—Eclectic.

Ointment, Lead.

See Ointment, Diachylon.—U. S. P.

Unguentum Plumbi (Germ. Pharm.), lead ointment, lead cerate, or ointment of lead subacetate is a different preparation, being made as follows:

Solution of lead acetate.....part 1
Wool fat, anhydrous.....part 1
Paraffin ointmentparts 8

Ointment, Lead Acetate.

Lead acetate, fine powder...gr. 20
Paraffin ointmentgr. 480
—Brit. Pharm.

Ointment of Lead Subacetate.

See Ointment, Lead.

Ointment of Lead Carbonate. (Unguentum Cerussæ.)

Lead carbonategr. 50
Benzoinated lardgr. 450

Triturate the lead carbonate to very fine powder, then add the lard, gradually added, until well mixed.—N. F. Appendix and U. S. P. 1890.

The Brit. Pharm. uses paraffin ointment instead of the lard.

The preparation of the Germ. Pharm. is made from 3 parts of the carbonate and 7 of paraffin ointment.

Ointment of Lead Carbonate, Camphorated. (Unguentum Cerussæ Camphoratum.)

Camphor, fine powder.....gr. 23
Ointment of lead carbonate,
Germ. Pharm.av.oz. 1

Mix the camphor thoroughly with a portion of the ointment and then add the remainder of the ointment.—Germ. Pharm.

Ointment, Lead, Compound. (Mayer's Ointment.)

Olive oilav.oz. 10
Gum turpentineav.oz. 2
Yellow waxav.oz. 1
Butter, unsaltedav.oz. 1
Red leadav.oz. 4
Honeyav.oz. 3
Camphor, powderav.oz. 2

Melt the wax and turpentine together, add the butter and oil, heat nearly to boiling, and add gradually, with constant stirring, the red lead, continuing the heat and the stirring until the mixture becomes black or brown; allow to cool, and when nearly cold add the honey and camphor, stirring until the latter is dissolved.—Eclectic.

Ointment of Lead Iodid.

Lead iodidgr. 50
Benzoinated lardgr. 450

Triturate the lead iodid to very fine powder, then rub with the lard, gradually added, until well mixed.—N. F. Appendix and U. S. P. 1890.

The Brit. Pharm. uses yellow paraffin ointment instead of the lard.

Ointment, Lead Subacetate. (Ointment of Glycerite of Lead Subacetate.)

Glycerite of lead subacetate.av.oz. 1
Paraffin ointment, white...av.oz. 5
—Brit. Pharm.

Ointment of Lead Tannate. (Unguentum Phembi Tannici—Unguentum ad Decubitum.)

Tannic acidpart 1
Solution of lead subacetate.parts 2
Lardparts 17
All parts by weight.

Triturate the acid and solution to a smooth mixture, and incorporate the lard.—Germ. Pharm.

Ointment, Marjoram. (Meiran or Mairan Butter.)

Sweet marjoram, coarse
powderav.oz. 3¼
Alcoholfl.oz. 3
Ammonia waterm. 40
Lardav.oz. 16

Moisten the herb with the mixed alcohol and ammonia, place in a suitable vessel and close tightly; after 12 hours,

melt the lard, add the moistened herb, digest the whole at a temperature of 50 to 60 deg. C. for 5 to 6 hours, agitating frequently, and, express.—D.

Ointment, Marshmallow. (Althæa Ointment—Yellow Ointment—Unguentum Flavum.)

Turmeric, powder	gr. 150
Lard	av.oz. $8\frac{1}{4}$
Yellow wax	av.oz. $\frac{1}{2}$
Resin	av.oz. $\frac{1}{2}$

Digest the turmeric in the lard for half an hour over a water bath, then add the wax and the resin previously melted together, melt the whole together and strain the ointment.—Germ. Pharm. (1st).

Ointment, Mercurial. (Unguentum Hydrargyri or Ung. Hyd. cinereum.)

I.

Mercury (metal)	av.oz. 8
Benzoinated lard	av.oz. 4
Prepared suet	av.oz. $3\frac{3}{4}$
Oleate of mercury, 25 p. c.	gr. 140

Triturate the oleate in a warm mortar, add the mercury gradually by means of a pipette and when the globules are divided and distributed, set it aside for about 15 minutes. Melt the lard and suet, allow the mixture to cool partially, add about $\frac{1}{2}$ av. ounce of it to the mercurial mixture, and continue the trituration until globules of mercury are no longer visible under a lens magnifying 10 diameters. Then add the remainder of the lard and suet and mix thoroughly.

The product is to be assayed and 100 parts of ointment should yield not less than 49 parts of mercury.—U. S. P.

The above is an excellent process for the extinction of the mercury. A substance which is superior to mercury oleate as an extingisher of mercury is hydrous wool fat; see formula No. IV.

The U. S. P. mercurial ointment contains one-half mercury, that of many of the other pharmacopœias only one-third mercury. The above may be made into one-third preparation by using corres-

pondingly less mercury, e. g., 4 av. ounces each of mercury, lard and suet and 72 grains of oleate of mercury.

The above ointment may be diluted for counter sale by addition of petrolatum as directed in Ointment, Blue, which see.

II.

Mercury	av.oz. 16
Lard	av.oz. 16
Mutton suet	av.oz. 1

Triturate together until metallic globules cease to be visible.—Brit. Pharm.

III.

Mercury	av.oz. 5
Olive oil	gr. 65
Mutton suet	av.oz. $3\frac{1}{2}$
Wool fat, anhydrous.....	av.oz. $\frac{3}{4}$
Lard	av.oz. 5. dr. $4\frac{1}{2}$

Triturate the oil and wool fat together, then incorporate the mercury by trituration, adding the metal gradually in small portions, not adding a further portion of metal until the previous portion is no longer discernible to the naked eye. Now melt the lard and suet together and when nearly cold, incorporate with the previous mixture.—Germ. Pharm.

IV.

Mercury	av.oz. 5
Wool fat, hydrous.....	av.oz. 5
Lard	av.oz. 4
White wax	av.oz. 1

Triturate the mercury with the wool fat until the former is extinguished, then add the lard and wax, previously melted together and allowed to cool.—Austr. Pharm.

Ointment of Mercury Ammonio-Chlorid.

See Ointment of Ammoniated Mercury.

Ointment, Mercurous Chlorid.

See Ointment, Calomel.

Ointment, Mercury, Compound.

Mercurial ointment	parts 10
Yellow wax	parts 6
Olive oil	parts 6
Camphor	parts 3

Mix the wax, oil and ointment by the aid of a gentle heat, add the camphor, and triturate until cold.—Brit. Pharm.

Ointment of Red Mercuric Iodid.

Red mercuric iodid.....gr. 20
 Benzoated lardgr. 480
 —Brit. Pharm.

**Ointment of Mercuric Nitrate. (Cit-
 rine or Yellow Ointment—Ungu-
 entum Hydrargyri Nitratis or
 Citrinum—Unguentum Citrinum
 —Gelbe Quecksilber Salbe—Mer-
 curial Balsam.)**

I.

Mercury (metal)av.oz. 1
 Nitric acidav.oz. 2½
 Lardav.oz. 10¾

Heat the lard, in a glass or porcelain vessel, to a temperature of 105 deg. C.; then withdraw the heat, gradually add 1 av. ounce of nitric acid, and, when the reaction moderates, reapply the heat, until effervescence ceases. Then allow the mixture to cool to about 40 deg. C. In the meantime dissolve the mercury in the remainder of the acid with the aid of sufficient heat to prevent the solution from crystallizing and add this solution to the lard mixture. When the mass begins to congeal, stir it thoroughly with a wooden spatula until it is of a bright citrine color. Avoid contact with metallic utensils.—U. S. P.

The nitric acid should be of the strength of the U. S. P., viz., 68 p. c. of absolute acid; the lard should be real hog's lard, not a composition.

This formula is an excellent one, although other fatty bodies such as lard oil, cod liver oil, neatsfoot oil, etc., have been suggested in place of the lard. The U. S. P. 1890 used lard oil. The main point to secure a good product is not to allow the temperature to exceed that specified. England⁷ has made the excellent suggestion to use 470 grains of red mercuric oxid instead of the mercury (being purer and more easily weighed), dissolving this in the acid, adding gradually to the mixture of lard and acid at a temperature of 60 deg. C. (instead of 40), stirring till cool, and adding ¾ av. ounce of glycerin (to prevent ultimate friableness).

II.

Mercuryav.oz. 1
 Nitric acidfl.oz. 3
 Lardav.oz. 4
 Olive oilav.oz. 7

Dissolve the mercury in the acid without the aid of heat, agitating gently from time to time. Heat the lard and oil together on a sand bath, so that the mixture when transferred to a heated earthenware jar, capable of holding ten times the quantity, shall be at a temperature of about 145 deg. C. Add the cold mercurial solution very gradually, stirring constantly to promote disengagement of the fumes. After frothing has ceased, the mixture, which should have a temperature of not less than 90 deg. C., must be kept stirred until cold.

The product should be firm in consistence and have a pale lemon color.—Brit. Pharm.

Judged from the American standpoint, this formula is faulty in not having a portion of the acid added to the lard and oil before adding the mercurial solution, in excessive acidity of the product, and in directing an excessive temperature.

Ointment, Mercuric Nitrate, Diluted.

Ointment of mercuric nitrate, part 1
 Petrolatum, yellowparts 4
 —Brit. Pharm.

Ointment, Mercuric Oleate.

Oleate of mercury, precipitatedpart 1
 Benzoated lardparts 3
 —Brit. Pharm.

Ointment of Red Mercuric Oxid.
 (Ointment of Red Precipitate—
 Unguentum Hydrargyrum Rubrum.)

I.

Red mercuric oxid, very fine powdergr. 50
 Waterm. 50
 Wool fat, hydrous.....gr. 200
 Petrolatumgr. 200

Triturate the oxid with the water until the mixture is perfectly smooth and absolutely free from gritty particles, then add the wool fat in divided por-

tions and incorporate thoroughly with the petrolatum.—U. S. P.

Avoid contact with metallic utensils.

II. Brit. Pharm:

Red mercuric oxid, very
fine powderpart 1
Paraffin ointment, yellow...parts 9

III. Germ. Pharm. also uses 1 of
oxid and 9 of paraffin ointment.

The first formula is the best, the product being the smoothest.

Ointment of Yellow Mercuric Oxid.

I.

Yellow mercuric oxid.....gr. 50
Waterm. 50
Wool fat, hydrous.....gr. 200
Petrolatumgr. 200

Triturate the oxid with the water until the mixture is perfectly smooth, then add the wool fat in divided portions and incorporate thoroughly with the petrolatum.—U. S. P.

Avoid contact with metallic utensils.

In making an ointment of yellow oxid of mercury, the oxid may also be first triturated to a smooth paste with a small amount of a bland fixed oil (olive, sweet almond, paraffin) before adding the vehicle.

II. Improved Ointment of Yellow Mercuric Oxid or Unguentum Hydragyric Oxidi Flavi Melioratum:

Yellow mercuric oxid, freshly preparedpart 1
Wool fat, hydrous.....parts 2½
Distilled watersufficient
Petrolatum, soft, pure,
enough to make.....parts 10

Prepare the oxid by dissolving 63 grains of pure mercuric chlorid and 24 grains of pure sodium hydrate each separately in a little distilled water, adding the mercuric solution to the other with constant stirring, collecting the precipitate on a white filter, and washing with distilled water until absolutely free from chlorids. Allow the precipitate to drain, transfer the magma to a porcelain mortar, and triturate in its moist state, adding a small quantity of distilled water if necessary to make a thin paste. Then add first the wool fat, triturating

to a perfectly smooth mixture, then gradually incorporate the petrolatum.—
Cin. Acad. Pharm.

This ointment contains 10 per cent. of mercuric oxid and is perfectly free from grit. Weaker ointments may be prepared as desired by the physician. The 2 per cent. ointment, the kind usually prescribed, may be made by mixing the 10 per cent. with petrolatum in the proportion of 50 grains of the former to 200 of the latter.

—Brit. Pharm.

III.

Yellow mercuric oxid, very
fine powderpart 1
Petrolatum, yellowparts 9

—Brit. Pharm.

IV. Pagenstecher's ointment of yellow mercuric oxid or ophthalmic ointment (Unguentum Ophthalmicum):

Yellow mercuric oxidgr. 3
Ointment of rose water.....gr. 100

—D.

Ointment, Mezereum.

Fluid extract of mezereum..fl.oz. 1
Lardav.oz. 3¼
Yellow waxav.oz. ½

Melt together the lard and wax with a moderate heat, add the fluid extract, and stir the mixture constantly until the alcohol has evaporated; then remove from the source of heat and continue stirring until cool.—N. F. Appendix and U. S. P. 1880.

Ointment, Nerve.

Bittersweet root barkparts 2
Wormwoodpart 1
Chamomilepart 1

Moisten with hot water, put into porpoise oil or any kind of soft animal oil, and simmer over a slow fire for 12 hours. Strain and add 1 ounce of oil of turpentine for each pound of ointment.—Thomsonian (from the Guide and the Materia Medica).

Ointment of Nitric Acid.

Olive oilfl.oz. 1
Lardgr. 60
Nitric acidm. 10
Melt the lard at a gentle heat, add the

oil, and stir in the acid with a glass rod until the mixture stiffens.—Eclectic.

Ointment, Nutgall. (Ointment of Galls—Gall Ointment.)

Nutmeg, No. 80 powder....av.oz. 1
Simple ointmentav.oz. 4

Rub the nutgall with the lard, gradually added, until well mixed.

The use of metallic utensils should be avoided.—U. S. P.

The Brit. Pharm. uses benzoated lard instead of simple ointment.

Ointment of Nutgall and Opium. (Gall and Opium Ointment.)

Nutmeg ointmentgr. 925
Opium, very fine powder...gr. 75
—Brit. Pharm.

Ointment of Oleoresin of Capsicum.

Oleoresin of capsicum....av.oz. 1
Yellow waxav.oz. ½
Benzoated lardav.oz. 4

Melt the lard and wax at a low temperature, add the oleoresin, mix thoroughly, and, if necessary, strain through muslin. Stir until cold.—Brit. Pharm.

As a counter-irritant, the ointment will bear dilution from three to six times.

Ointment, Ophthalmic, Pagenstecher's.

See Ointment of Yellow Mercuric Oxid, No. IV.

Ointment, Ophthalmic, St. Yves'. (Compound Ophthalmic Ointment—St. Yves' Ophthalmic Balsam.)

Red mercuric oxid.....gr. 36
Zinc oxidgr. 12
Camphorgr. 10
Sweet almond oil.....gr. 20
Yellow waxgr. 48
Lardgr. 280

The lard and wax should be melted together, the zinc and mercuric oxids should be rubbed to a perfectly smooth mixture with a portion of this mixture, the remainder should be added, and then the camphor previously dissolved in the oil by the aid of a gentle heat.—Germ. Pharm. (1st).

Ointment, Paraffin.

Several pharmacopeias (but not the U. S. P.) now recognize what is termed

paraffin ointment which is used as an ointment vehicle instead of simple ointment when a non-absorbent vehicle is desired or required. This preparation is a mixture of a hard with a soft or liquid paraffin. Hard paraffin (usually called simply paraffin, also paraffin wax) does not make a smooth mixture with soft paraffin (petrolatum), and hence paraffin ointment is liable to lack homogeneity. Ceresin or beeswax would make a smoother mixture than hard paraffin.

I.

Paraffinparts 3
Petrolatumparts 7

Melt together in a shallow evaporating dish; as the liquid cools, triturate constantly, until, when cold a uniform plastic ointment is produced.—Brit. Pharm.

When the paraffin ointment is used as the vehicle for white substances, such as zinc oxid, lead carbonate, etc., it should be prepared with the white variety of petrolatum; when used in colored ointments it should be prepared with the yellow variety of petrolatum.

The proportions of paraffin and petrolatum in this ointment may be varied to meet the exigencies of climate and prevailing temperature.

II.

Paraffin, hardpart 1
Paraffin oil (liquid petrolatum)parts 4

This should melt at a temperature between 40 and 50 deg. C.—Germ. Pharm.

III.

Paraffin oil (liquid petrolatum)parts 7
Yellow waxparts 3

Melt the wax, add the oil, and stir until cool.—Eclectic.

Ointment of Pepper. (Ointment of Black Pepper.)

Black pepper, fine powder...av.oz. 1
Pine tarfl.oz. 4
Sootav.oz. 1
Lardav.oz. 4

Melt the lard and tar together, then

add the soot, and finally the pepper; stir frequently until cool.—Eclectic.

Ointment, Pine and Lanoline.

Petrolatum, whiteav.oz.	1½
White waxav.oz.	¾
Wool fat, hydrousgr.	390
Oil of pinus sylvestris (oil of Scotch fir or oil of pine needles)fl.dr.	1
Oil of juniper berriesm.	15

Melt the solid ingredients on a water bath, allow to cool partially, stir in the oils, and continue stirring until a uniform smooth ointment is formed.

A pleasant ointment for eczema, scabies, etc.—Cinc. Acad. Pharm.

Ointment of Poke.

Poke leaves, collected just before ripening of the berriesav.lb.	1
Lardav.oz.	4
Alcoholfl.oz.	4
Yellow waxav.oz.	½

Mix all, simmer slowly until the leaves are crisp, and express through linen.

An ointment is sometimes made by mixing 90 grains of powdered poke leaves or root or of the extract with 1 av. ounce of lard.—Eclectic.

Ointment of Potassium Cyanid.

Potassium cyanidgr.	6
Sweet almond oilfl.dr.	1
Cold creamav.oz.	1

Mix well.—Eclectic.

This is used as an application to the sound skin in neuralgia.

Ointment of Potassium Iodid.

Potassium iodidgr.	50
Potassium carbonategr.	3
Waterm.	50
Benzoinated lardgr.	400

Dissolve the two potassium salts in the water by trituration, then gradually incorporate the lard.—U. S. P. and Brit. Pharm.

This preparation should be freshly made as required.

The Germ. Pharm. directs 40 parts of potassium iodid, ½ of sodium hyposulfite, 30 of water and 330 of lard.

Ointment of Potassium Sulfuret. (Ointment of Potassium Sulfid.)

Sulfurated potassa (sulfuret of potash)gr.	60
Sodium carbonategr.	60
Lardav.oz.	1

Triturate the two salts to an impalpable condition and incorporate the lard.—Eclectic.

This is used in ringworm, itch, and other cutaneous diseases.

Ointment, Pyrogallol, Comp. Unna's. (Compound Pyrogallic Acid Ointment.)

Pyrogallic acidparts	5
Salicylic acidparts	2
Ichthyolparts	5
Petrolatum, yellowparts	88

—H.

Ointment, Resin.

I.

Resin, powderav.oz.	2
Yellow waxav.oz.	2
Olive oilav.oz.	2
Lardav.oz.	1½

Melt the resin and wax together, add the oil and lard, strain and stir until cold.—Brit. Pharm.

II. The corresponding preparation of the Germ. Pharm. is called Basilicon Ointment (commonly known as Koenig's Salbe) and is prepared as follows:

Soft turpentineav.oz.	1
Mutton suetav.oz.	1½
Resinav.oz.	1½
Yellow waxav.oz.	1½
Olive oilav.oz.	4½

The above are somewhat softer than the resin cerate or basilicon ointment of the U. S. P. See Cerate, Resin.

Ointment, Resorcin, Compound. ("Soothing Ointment.")

Resorcinparts	6
Zinc oxidparts	6
Bismuth subnitrateparts	6
Oil of cadeparts	12
Paraffinparts	10
Petrolatumparts	25
Wool fat, hydrousparts	32

Triturate the resorcin, zinc oxid, and bismuth subnitrate with a small quantity of the wool fat until a perfectly smooth mixture is obtained. Incorporate this with the remainder of the wool fat, add the paraffin and petrolatum pre-

viously melted together, and lastly the oil of cade.—N. F.

Preserve in containers protected from the light.

Ointment of Rose Water. (Cold Cream—Unguentum Aquæ Rosæ—Unguentum Leniens or Emolliens or Refrigerans—Creme Celeste.)

Spermaceti	av.oz. 2
White wax	av.oz. 2
Sweet almond oil	av.oz. 9¼
Stronger rose water	fl.oz. 3
Borax, fine powder	gr. 35

Reduce the spermaceti and white wax to fine shavings and melt them at a moderate heat, add the oil and stir, continuing the heat until the mixture is uniform; then gradually add the rose water, previously warmed and in which the borax has been dissolved, stirring the mixture rapidly and continuously until it congeals and becomes of uniform consistence.—U. S. P.

Objection has repeatedly been made to the presence of borax in this ointment as this chemical reacts with many substances with which cold cream is frequently combined. Borax is of advantage only to assist in combining the rose water with the fats. The U. S. P. 1880 directed no borax; neither does the Brit. or Germ. Pharm. The present U. S. P. directs that if the ointment is to be used as a vehicle for metallic salts, the borax should be omitted.

The Brit. Pharm. directs 2 av. ounces each of white wax and spermaceti, 12 av. ounces of sweet almond oil, 9 fluid-ounces of stronger rose water, and 12 minims of oil of rose.

The Germ. Pharm. directs 1¾ av. ounces of white wax, 2 of spermaceti, 14¼ of sweet almond oil, 7 of water, and 14 drops of oil of rose.

Ointment, Rosemary, Comp'd. (Unguentum Nervinum—Aromatic Ointment.)

Yellow wax	av.oz. 1
Expressed oil of nutmeg ..	av.oz. 1
Mutton suet	av.oz. 4
Lard	av.oz. 8
Oil of rosemary	fl.dr. 4
Oil of juniper berries	fl.dr. 4

Melt the wax and suet, add the lard and nutmeg oil, stir till melted, allow to cool, then add the two volatile oils, and stir until well mixed.—Germ. Pharm.

Ointment, Salicylic Acid.

I.

Salicylic acid, powder	gr. 10
Paraffin ointment, white ..	gr. 490
—Brit. Pharm.	

II. The following is used sometimes in this country:

Salicylic acid	gr. 40
Tincture of benzoin	m. 80
Petrolatum	gr. 160
Simple ointment	gr. 200

Dissolve the acid in the tincture, and, having previously mixed the other ingredients, incorporate the solution with the mixture.

Ointment of Shepherd's Purse. (Unguentum Bursæ Pastoris, Rade-macher's.)

Shepherd's purse herb, freshly gathered	part 1
Lard	parts 2

Contuse the shepherd's purse to a pulp, add it to the melted lard, and carefully heat the mixture over a direct flame until the moisture has all evaporated.—D. and H.

Ointment, Simple. (Ointment—Ointment of Lard, U. S. P. 1860.)

I.

White wax	part 1
Benzoinated lard	parts 4

Melt the wax, add the lard and heat gently until liquefied; then stir the mixture until it congeals.—U. S. P.

In the former editions of the U. S. P., this preparation was made with yellow wax. When made with the latter, it keeps better than when made with white wax.

II.

White wax	av.oz. 2
Benzoated lard	av.oz. 3
Sweet almond oil	fl.oz. 3

Melt together and stir constantly until cool.—Brit. Pharm. 1885.

There is no corresponding preparation in the Brit. Pharm. 1898.

III. The corresponding preparation

of the Germ. Pharm. is called Unguentum Cereum or Wax Ointment and is prepared from 7 parts of olive oil and 3 of yellow wax.

Ointment of (Wood) Soot. (Unguentum Fuliginis.)

Wool soot, very fine powder. part 1

Lard parts 4

Used for burns, tinea capitis, and other cutaneous affections.—Eclectic.

Ointment, Spermaceti.

Spermacetiav.oz. 2½

White waxav.oz. 1

Sweet almond oil.....av.oz. 9

Benzoin, coarse powder.....av.oz. ¼

Melt together the spermaceti, wax and oil, add the benzoin, continue the application of heat for 2 hours, frequently stirring the mixture, then strain, and stir the ointment constantly until cold.—Brit. Pharm.

Ointment, Stavesacre. (Unguentum Staphisagriæ.)

Stavesacre seeds, crushed...av.oz. 2

Yellow waxav.oz. 1

Benzoated lardav.oz. 8½

Digest the seed with the lard on a water bath for 2 hours, strain and press through calico, add the wax, heat gently until the wax is melted, and stir the mixture until cold.—Brit. Pharm.

Ointment of Stramonium.

Extract of stramonium

leavesgr. 50

Diluted alcoholm. 25

Wool fat, hydrous.....gr. 100

Benzoated lardgr. 325

Triturate the extract with the diluted alcohol to a smooth paste, with this incorporate the wool fat, then add the lard, and mix thoroughly.—U. S. P.

Ointment of Stramonium, Compound.

Bittersweet root bark.....av.oz. 1

Stramonium leavesav.oz. 1

Cicuta leavesav.oz. 1

Belladonnaav.oz. 1

Yellow dock rootav.oz. 1

Venice turpentineav.oz. 1

Lardav.oz. 8

Alcoholsufficient

Bruise the leaves and roots, cover with alcohol, allow to digest at a moderate heat for 4 hours, add the lard,

continue the heat until the leaves are crisped, strain through linen, add the turpentine and stir until cold.—Eclectic.

Ointment of Strychnine.

Strychnine (alkaloid).....gr. 20

Oleic acid, pure.....gr. 120

or sufficient to dissolve the alkaloid.

Simple ointmentgr. 360

—Eclectic.

Ointment, Sulfur.

Washed sulfurparts 3

Benzoated lardparts 17

Rub the sulfur with the lard, gradually added, until well mixed.—U. S. P.

The Brit. Pharm. directs 1 part of finely sifted sublimed sulfur and 9 parts of benzoated lard.

Ointment, Sulfur, Alkaline.

Washed sulfurgr. 100

Potassium carbonategr. 50

Waterm. 25

Benzoated lardgr. 320

Rub the sulfur with the potassium carbonate and the water, gradually add the lard, and mix thoroughly.—N. F. Appendix and U. S. P. 1880.

Ointment, Sulfur, Compound. (Wilkinson's Ointment—Hebra's Itch Ointment—Unguentum Cadini.)

I.

Precipitated calcium car-

bonateparts 2

Sublimed sulfurparts 3

Oil of cadeparts 3

Green soapparts 6

Lardparts 6

Mix the lard with the soap and oil, then gradually incorporate the sulfur and precipitated calcium carbonate.—N. F.

The above is Hebra's modification of Wilkinson's ointment. Sometimes birch tar is used for the oil of cade and petrolatum for the lard.

II.

Sulfurav.oz. 1

White hellebore, powder.....gr. 57

Potassium nitrategr. 8

Soft soapav.oz. 1

Poke ointmentav.oz. 3

Oil of bergamotm. 15

—Eclectic.

Ointment of Sulfur Hypochlorite.

The following has been used under the above name:

Sulfur sublimed	gr. 60
Oil of bitter almond.....	m. 10
Lard	gr. 420
Sulfur chlorid	m. 8

Mix the first three ingredients, then quickly incorporate the chlorid.

Ointment of Sulfur Iodid.

Sulfur iodid	gr. 20
Glycerin	gr. 20
Benzoated lard	gr. 460

Triturate the iodid with the glycerin in a slightly warmed mortar until a smooth paste results, gradually add the lard and stir until cold.—Brit. Pharm.

**Ointment, Sulfur, Red, Lassar's.
(Red Salve.)**

Vermillion (red mercuric sulfid)	part 1
Sulfur, sublimed	parts 25
Petrolatum, yellow	parts 74
Oil of bergamot	part 1

—D.

Ointment of Sulfuric Acid.

Sulfuric acid	fl.dr. 1
Lard	av.oz. 1

Mix in a glass or porcelain mortar.—Eclectic.

Ointment of Tannic Acid.

Tannic acid	av.oz. 1
Glycerin	av.oz. 1
Simple ointment	av.oz. 3

Dissolve the acid in the glycerin with the aid of a gentle heat, then mix the solution thoroughly with the ointment in a mortar, avoiding the use of iron utensils.—U. S. P.

Ointment, Tar. (Unguentum Picis Liquide.)

Pine tar	av.oz. 5
Yellow wax	av.oz. 1½
Lard	av.oz. 3½

Melt the wax, add the lard, and, to the melted mixture, add the tar, previously warmed, and incorporate thoroughly; then strain through muslin, and stir until congealed.—U. S. P.

This preparation is not as satisfactory as that of the U. S. P. 1880 which was made from equal parts of suet and tar,

the suet being melted, the tar added, the whole strained, and then stirred while congealing.

The preparation of the Brit. Pharm. is made from 5 parts of tar and 2 of yellow wax.

Ointment, Tar, Compound.

Oil of tar	parts 4
Tincture of benzoin.....	parts 2
Zinc oxid	parts 3
Yellow wax	parts 25
Lard	parts 32
Cotton seed oil	parts 35

Melt the yellow wax and lard with the cottonseed oil at a gentle heat. Add the tincture of benzoin, and continue heating until all the alcohol has evaporated. Then withdraw the heat, add the oil of tar, and finally the zinc oxid, incorporating the latter thoroughly, so that on cooling, a smooth, homogeneous ointment may result.—N. F.

Ointment, Tartar Emetic.

See Ointment, Antimonial.

Ointment of Thymol.

Thymol	part 1
Alcohol	part 1
Paraffin ointment	parts 9

Dissolve the thymol in the alcohol, and incorporate with the ointment.—Eclectic.

Ointment of Tobacco.

I.

Extract of tobacco	gr. 60
Alcohol	fl.oz. 1
White wax	av.oz. ½
Lard	av.oz. 4½

Dissolve the extract in the alcohol, then add the wax and lard previously melted together, and continue the heat until all of the alcohol has been evaporated.—Eclectic.

This large amount of alcohol is unnecessary: only so much should be used as will soften the extract.

It is directed that the ointment may also be prepared by heating together 8 av. ounces of fresh tobacco leaves, 2 av. ounces of lard, 2 fluidounces of alcohol, and ¼ av. ounce of yellow wax, until the leaves are crisp, then straining.

II.

Tobacco leaves	lb.	½
Yellow dock root	lb.	1
Lovage root	lb.	1
Soft water	gall.	2
Lard, fresh	lb.	2
Yellow wax	oz.	4
Burgundy pitch	oz.	4

Bruise the leaves and roots, which should be fresh, in a mortar, add the water, boil one hour, strain with expression, evaporate liquid to the consistency of a thick syrup, add the other ingredients, and continue a gentle heat until all the moisture has evaporated. Thomsonian (from the *Materia Medica*).

Ointment, Turpentine.

I.

Gum turpentine,	
Yellow wax,	
Oil of turpentine, each, equal parts	
by weight.	

Melt the turpentine and wax together at a gentle heat, add the oil and stir until cold.—Germ. Pharm.

II.

Oil of turpentine	fl.oz.	1
Resin, coarse powder.....	gr.	54
Yellow wax	av.oz.	½
Lard	av.oz.	½

—Brit. Pharm. 1885.

Ointment, Veratrine.

Veratrine (alkaloid)	gr.	20
Sweet almond oil.....	gr.	30
Benzoinated lard	gr.	450

Rub the veratrine with the oil to a smooth paste, then gradually add the lard, and mix thoroughly.—U. S. P.

The Brit. Pharm. directs 10 grains of veratrine, 40 of pure oleic acid, and 450 of lard. Rub the veratrine with the acid, gently warm the mixture until the alkaloid is dissolved, and incorporate the lard.

Ointment, Wax.

White wax	oz.	4
Spermaceti	oz.	3
Olive oil	pint	1

—Thomsonian (from the *Materia Medica*).

Ointment of Wild Indigo. (Ointment of Baptisia.)

Fluid extract of wild in-		
digo	fl.oz.	5
Butter	av.oz.	2½
Yellow wax	av.oz.	¾
Tallow	gr.	165

Melt the fats together, add the fluid extract, and continue heating carefully until all the alcohol and water have evaporated, meanwhile stirring frequently; allow to cool, stirring from time to time till nearly solid.—Eclectic.

Instead of the fluid extract of wild indigo, a corresponding amount of "solid" extract may be used; this should be softened with water or diluted alcohol after which the fats in melted state should be incorporated with it.

Ointment, Witch Hazel. (Hamamelis Ointment.)

Fluid extract of witch hazel	
leaves	m. 50
Wool fat, hydrous.....	gr. 420
—Brit. Pharm.	

—Brit. Pharm.

Ointment, Wool Fat.

Wool fat, anhydrous.....	parts	4
Water	part	1
Olive oil	part	1

Melt the fat on a water bath at a gentle heat, incorporate the water and then the oil.—Germ. Pharm.

Ointment, Zinc, Comp'd. (Wilson's Ointment—Wilson's Zinc Ointment.)

Zinc oxid	av.oz.	3
Benzoin, fine powder.....	av.oz.	½
Lard	av.oz.	12½

Digest the benzoin with the lard, on a water bath for one hour, stirring constantly; then strain, incorporate the oxid, and stir until cool.—H.

Ointment, Zinc, Mild.

Olive oil	av.oz.	4
Spermaceti	av.oz.	1½
White wax	gr.	495
Zinc oxid	av.oz.	½
Morphine sulfate	gr.	15
Benzoic acid	gr.	15
Oil of rose	drops	3

Prepare like Ointment of Zinc Oxid, Compound, which see.—Eclectic.

Ointment, Zinc Oleate.

Zinc sulfate, pure.....av.oz. 2
 Castile soap, white, shavingsav.oz. 4
 Distilled water, boiling,
 Petrolatum, white, each....sufficient

Dissolve the zinc sulfate in 4 fluid-ounces of distilled water and the soap in 40 fluidounces of water. Mix the solutions, collect the precipitated zinc oleate, wash it with hot distilled water until the washings afford little or no reaction for sulfate, dry on a water bath, mix with an equal weight of the paraffin previously melted, and stir till cold.—Brit. Pharm.

Ointment of Zinc Oxid. (Commonly called Zinc Ointment.)

Zinc oxid, very fine powderav.oz. 3
 Benzoinated lardav.oz. 12

Rub the oxid, which must be free from gritty particles, with an equal weight of melted benzoinated lard, and with this incorporate the remainder of the lard, previously melted. If necessary, strain the ointment while warm and stir thoroughly until it congeals.—U. S. P.

Manufacturing chemists now make a very fine grade of zinc oxid suitable for preparing this ointment; on no account should a cheap, inferior grade of oxid be used as this always contains gritty particles.

In the U. S. P. 1890, the ointment was made by sifting the oxid through a fine sieve into the melted lard, the mixture then being stirred till congealed.

The Brit. Pharm. directs 3 of zinc oxid and 17 of benzoated lard.

The Germ. Pharm. directs 1 part of the oxid to 9 of lard.

Ointment of Zinc Oxid, Compound.

Olive oilav.oz. 4
 Spermacetiav.oz. 1½
 White waxav.oz. ½
 Zinc oxidgr. 380
 Benzoic acidgr. 15
 Morphine sulfategr. 6
 Oil of rose.....drops 3

Triturate the zinc oxid, benzoic acid, morphine sulfate and olive oil to a

smooth paste, add this to a melted mixture of the wax and spermaceti, stir almost constantly till cool, and then add the oil of rose.—Eclectic.

Ointment of Zinc Stearate.

Zinc stearate, fine powder,
 White petrolatum, equal parts by weight.

To the petrolatum, melted on a water bath, add the stearate. Continue the heat until the mixture becomes smooth, then stir while cooling until it congeals.—U. S. P.

Ointment of Zinc Sulfate.

Zinc sulfatepart 1
 Butter, freshparts 6

Rub the zinc sulfate to an impalpable powder and add the ointment.—Eclectic.

Oleates. (Oleata.)

While the oleates themselves are true chemical compounds the preparations known as oleates and recognized by the U. S. P. and N. F. are mixtures of these oleates with excess of oleic acid. These oleates may be divided into two classes, metallic and alkaloidal, the former being prepared by solution of a metallic oxid, the latter by solution of an alkaloid, in pure oleic acid.

The method of preparation of these oleates is to triturate the alkaloid or oxid, preferably sifting the latter first through a fine sieve, with the acid in a mortar to a smooth paste, then stirring until combination or solution is effected. Sometimes application of heat is recommended but this is not advisable and if used at all should not exceed 40 deg. C. Triturating the alkaloid with the acid in a warmed mortar is to be recommended.

The oleic acid for these preparations should be the purest obtainable. It is difficult to free this acid entirely from stearic and palmitic acids, but a very good article is now commercially available. The presence of these foreign acids makes a decided difference in the consistence of the oleate produced.

These oleates are used in different

strengths indicating the percentage by weight of metallic oxid or of alkaloid present in the finished product. Any oleate can be reduced to a weaker oleate by adding the proportionate amount of oleic acid or of fatty vehicle, if latter be preferred. The oleates intended to be used for the physiological or systemic effects of the base, as quinine, morphine and mercuric oleates, should be diluted with oleic acid, or with purified wool fat; the oleates intended for surface medication should be diluted with lard or petrolatum.

These oleates are unstable preparations, becoming rancid quite readily. The weaker the preparation, the more readily it undergoes change; and when made by the application of warmth the decomposition is facilitated. It therefore follows that the precipitated or normal oleates keep the best, and that it is advisable to have these on hand and to dilute them, as required, to the desired strength. The dilution should be with oleic acid, lard, etc., as described above for dilution of oleates.

The normal oleates are prepared adding an aqueous solution of a salt of the base to a solution of sodium or potassium oleate, collecting the precipitate, washing out the alkaline salt with warm or hot water (for mercuric oleate use only warm water), and then freeing from excess of water.

The commercial nomenclature of the normal oleates of metallic bases is peculiar. For example, normal mercuric oleate is said to be 28.3 per cent. strength, meaning 28.3 per cent. of oxid. But of course it contains no free oxid of mercury. What is meant is that if 28.3 parts by weight of mercuric oxid be converted into a soluble mercuric salt and then be precipitated with sodium or potassium oleate solution, the collected, washed and dried mercury oleate should weigh 100 parts. In the case of the alkaloidal oleates, the percentage given indicates the proportion of base present in the compound.

The preparations known as ointments of oleates are oleates reduced with lard, petrolatum, paraffin ointment, simple ointment, wool fat, etc. The various ointments of alkaloids (aconitine, atropine, cocaine, veratrine) of the Brit. Pharm. are now prepared by dissolving the alkaloid in oleic acid and then adding lard, and hence these are examples of ointments of oleates. See also Ointment of Zinc Oleate (Brit. Pharm.) which is a mixture of equal parts of precipitated zinc oleate and petrolatum, and Ointment, Mercuric Oleate (Brit. Pharm.), a mixture of 1 part of precipitated mercuric oleate and 3 parts of lard.

Oleate of Aconitine.

Aconitine (alkaloid)gr. 33
Oleic acid, pure.....fl.oz. 4

Or mix in the proportion of 1 part by weight of aconitine to 49 by weight of acid.

Triturate the aconitine with a small portion of the acid in a mortar, then incorporate the remainder of the acid, and stir the mixture frequently until the alkaloid is dissolved.

The market affords a variety of aconitines made by different processes, by different manufacturers, and of greatly different potency. Only the pure crystallized or crystallizable alkaloid, having all the characters demanded by the U. S. P. should be used.—N. F.

Oleate of aconitine should never be applied with the unprotected hand or fingers. A pencil or little mop should be used.

Oleate of Ammonium, Liquid.

See Liniment, Ammonia.

Oleate of Atropine.

Atropine (alkaloid)gr. 33
Alcoholm. 35
Oleic acid, pure.....fl.oz. 2
Olive oilfl.dr. 15

Triturate the alkaloid with the alcohol, add about an equal volume of oleic acid, and after warming the mortar stir until the alcohol has evaporated, add the remainder of the acid and continue

stirring until the atropine is dissolved; then add the olive oil.—U. S. P.

The product contains 2 per cent. by weight of atropine.

Oleate of Cocaine.

Cocaine (alkaloid)	gr. 82
Alcohol	m. 85
Oleic acid, pure	fl.oz. 2
Olive oil	fl.dr. 15

Prepare like oleate of atropine.—U.

S. P.

Oleate of Lead.

See Plaster, Lead.

Oleate of Mercury.

I.

Yellow mercuric oxid, very fine powder	av.oz. 1
Distilled water	fl.oz. 1
Oleic acid, pure, to make	av.oz. 4

Triturate the oxid with the water in a tared mortar, add 3 av. ounces of acid and mix thoroughly, warm the mortar to a temperature not exceeding 50 deg. C., stir occasionally till the water has evaporated, then add, if necessary, oleic acid to make 4 av. ounces and mix thoroughly.—U. S. P.

Avoid contact with metallic vessels.

Keep the oleate in tightly stoppered bottles.

This oleate will be more or less dense according to the purity of the oleic acid; the purer it is, that is the freer it is from palmitic and stearic acids, the thinner it is. Of course only the very purest obtainable oleic acid should be employed. While the U. S. P. directs the application of warmth to facilitate solution and combination of the oxid, this is not necessary nor is it advisable. Combination can be effected by mixing the oxid and acid in a mortar, and stirring occasionally, being careful to break down any lumps of oxid which may have formed. The cold process requires more time than the warm but the former yields a product which keeps longer.

The preparation of the U. S. P. is what is denominated as a "25 per cent. oleate of mercury," as it contains 25 per cent. by weight of mercuric oxid.

The preparation of the U. S. P. 1880 was a 10 per cent. oleate and this is the strength intended, as a rule, by physicians when none is specified. The U. S. P. 1890 had a 20 per cent. preparation. Other strengths, such a 5 per cent. or 15 per cent., may be made by diluting the 20 or 25 per cent. preparation with oleic acid. There is also on the market what is known as "precipitated or normal oleate of mercury," which is stated to represent 28.3 per cent. of mercuric oxid. While the other oleates of mercury consist actually of mercuric oleate dissolved in an excess of oleic acid, the normal oleate is the true oleate without the excess of oleic acid. This normal oleate can be prepared only by precipitation as follows:

Yellow mercuric oxid	gr. 175
Nitric acid, U. S. P.	gr. 150
Solution of sodium oleate	fl.oz. 16
Distilled water	sufficient

To the oxid contained in a small evaporating dish add the nitric acid, then 2 fluidounces of distilled water, and heat until the oxid is dissolved, adding, if necessary, to complete solution, a few more drops of acid, but as little as possible for the purpose. Dilute this with 2 pints of distilled water, add this to the sodium oleate solution, stirring constantly. Collect the precipitate and wash several times with luke warm distilled water to remove the sodium nitrate.

If solution of potassium oleate be used instead of solution of sodium oleate, 150 grains of mercuric oxid and 130 grains of nitric acid must be used for 1 pint of the solution.

The normal oleate of mercury may be diluted to weaker strengths by adding to 100 grains the following amounts of oleic acid (Edel's table):

To make 5 p. c. oleate add 466 gr. oleic acid.

To make 6 p. c. oleate add 371 gr. oleic acid.

To make 7 p. c. oleate add 304 gr. oleic acid.

To make 8 p. c. oleate add 254 gr. oleic acid.

To make 9 p. c. oleate add 214 gr. oleic acid.

To make 10 p. c. oleate add 183 gr. oleic acid.

To make 12 p. c. oleate add 136 gr. oleic acid.

To make 14 p. c. oleate add 102 gr. oleic acid.

To make 15 p. c. oleate add 89 gr. oleic acid.

To make 16 p. c. oleate add 77 gr. oleic acid.

To make 18 p. c. oleate add 56 gr. oleic acid.

To make 20 p. c. oleate add 41 gr. oleic acid.

See also Ointment, Mercuric Oleate.

II. Brit. Pharm. formula for mercuric oleate (precipitated or normal only being recognized):

Mercuric chlorid, pure.av.oz. 1

White castile soap, powder.av.oz. 2

Oleic acid, pure.....fl.dr. 1

Distilled water, boiling....sufficient

Dissolve the chlorid in 10 fluidounces of the distilled water; triturate the oleic acid with the soap, and dissolve the mixture in 11 fluidounces of the distilled water. Mix the two solutions, boil for 10 minutes, set aside for the mercuric oleate to deposit, decant the supernatant liquid, wash the precipitate with hot distilled water until the washings give little or no reaction for chlorid, and dry on a water bath.

Oleate of Morphine.

Morphine (alkaloid)gr. 86

Oleic acid, pure.....fl.oz. 4

Triturate the morphine to fine powder, add to the oleic acid, and dissolve by the aid of a gentle heat.

The above makes a preparation containing 5 per cent. of alkaloid by weight. If stronger preparations are desired, relatively greater proportions of alkaloid must be used. A 10 per cent. oleate, for instance, would require the use of 172 grains of morphine.

Oleate of Quinine.

Quinine (alkaloid)gr. 137

Oleic acid, pure.....fl.oz. 1

Or mix in the proportion of $1\frac{1}{4}$ av. ounces of alkaloid to 4 fluidounces of acid; or in the proportion of 1 av. ounce of alkaloid to 3 av. ounces of acid.

Triturate the quinine with the acid in a warm mortar with a small quantity of the acid to a smooth paste, then add the remainder of the acid, previously warmed, and stir frequently until the quinine is dissolved.—U. S. P.

The above makes a preparation containing 25 per cent. of alkaloid; preparations containing 10 per cent. and 5 per cent. of alkaloid are also common.

A 10 per cent. preparation may be made by dissolving 184 gr. of alkaloid in 4 fluidounces of acid, or $\frac{1}{2}$ av. ounce of alkaloid in $4\frac{1}{2}$ av. ounces of acid.

A 5 per cent. preparation may be made by dissolving 86 gr. of alkaloid in 4 fluidounces of acid.

In the N. F. (2nd edition), which recognized this preparation, it was directed that the quinine be first dried at 100 deg. C. until it ceases to lose weight.

When the quinine (alkaloid) is not available, it may be prepared as follows: Take 340 grains of official quinine sulfate, dissolve it in 32 fluidounces of water with the aid of a sufficient quantity of diluted sulfuric acid, then precipitate the quinine by means of ammonia water, added, under constant stirring, until it is in slight excess. Transfer the magma to a close muslin strainer, previously wetted, allow the liquid to drain off, and wash the precipitate with ice cold water, until the washings are practically tasteless, but using not more than about 1 quart of water. Lastly, dry the precipitate.

The theoretical quantity of dry quinine obtainable from 340 grains of the sulfate is 253 grains. In practice, approximately 250 grains will be obtained.

Oleate of Strychnine.

Strychnine (alkaloid)gr. 33

Oleic acid, pure.....fl.oz. 4

Or mix in the proportion of 1 part by weight of alkaloid with 49 of oleic acid.

Triturate together, dissolving by the aid of a gentle heat, if necessary.

The product contains 2 per cent. of strychnine by weight.

Oleate of Veratrine.

Veratrine (alkaloid)gr. 33

Oleic acid, pure.....fl.oz. 2

Olive oilfl.dr. 15

Triturate the veratrine with about 1½ fluidrams of olive oil, and after warming the mortar, add the acid and continue stirring until the alkaloid is dissolved, then add the remainder of the oil.—U. S. P.

Oleate of Zinc.

The U. S. P. 1890 recognized a 5 per cent. oleate, the N. F. a precipitated oleate.

I.

Zinc oxidgr. 92

Oleic acid, pure.....av.oz. 4

Put the oleic acid into a capacious porcelain capsule, gradually add to it the oxid by sifting it through a fine sieve upon the surface of the acid, and incorporate it by vigorous stirring. Set the mixture aside for a few hours, and then heat it on a water bath, frequently stirring, until the oxid is dissolved.—N. F. Appendix and U. S. P. 1890.

This preparation contains 5 per cent. of zinc oxid and is of ointment consistency.

II.

Zinc acetate, crystal.....av.oz. 1

Solution of sodium oleate....fl.oz. 42

Watersufficient

Dissolve the zinc acetate in 84 fluidounces of cold water, filter the solution, if necessary, through a pellet of absorbent cotton placed in the neck of a funnel, and then mix it slowly, and under constant stirring, with the solution of sodium oleate. Transfer the mixture to a wetted muslin strainer, and when the liquid has drained off, wash the precipitate with water, until the washings are practically tasteless. Lastly, dry the precipitate, spread on paper,

by exposure to dust-free air, without heat.—N. F.

The product contains an amount of zinc corresponding to about 13 per cent. of zinc oxid.

The theoretical yield of zinc oleate obtainable from 1 av. ounce of zinc acetate is 2½ av. ounces; in practice, about 2¼ av. ounces will be obtained. Zinc oleate, prepared by the above process, is in the form of a soft, white powder, and may be converted into a plaster or ointment by mixing it with such a proportion of oleic acid as may be required. See also Ointment, Zinc Oleate.

Oleo-Stearate of Zinc.

Zinc acetateav.oz. 2½

Stearic acid, pure.....av.oz. 5¼

Oleic acid, pure.....av.oz. 1

Caustic potassa, pure.....av.oz. 1

Alcoholfl.oz. 27

Distilled watersufficient

Dissolve the oleic and stearic acids in 16½ fluidounces of alcohol by the aid of heat and the caustic potassa in 11 fluidounces of water by the aid of heat and mix the hot solutions. Strain the mixture into a capacious vessel and add to it 27 fluidounces of hot distilled water. Dissolve the zinc acetate in 27 fluidounces of boiling distilled water, filter the solution, if necessary, and pour it, in a thin stream, into the hot alcoholic solution first obtained, with constant stirring. Then stir the mixture occasionally until cool, transfer it to a muslin strainer, allow the precipitate to drain, wash it thoroughly on the strainer with distilled water, and dry it in a moderately warm place. When dry, sift it through a very fine sieve.—N. F.

This is similar to Stearate of Zinc, which see.

Oleoresins (Ethereal Extracts.)

These preparations which may be described as acetone extracts consisting mainly of oil and resin. Comparatively few drugs are of a character suitable for making these preparations. The general process of the U. S. P. is as follows: Take any suitable quantity of

drug, usually about 1 av. pound, in about No. 40 powder, put it into a cylindrical glass percolator provided with a stop-cock and arranged with a cover and receptacle suitable for volatile liquids, pack the drug firmly, and percolate slowly with acetone (which should be 99 per cent. pure), added in successive portions, until the drug is exhausted. Recover the greater part of the acetone from the percolate by distillation on a water bath, and having transferred what remains to a suitable dish, allow the remaining acetone to evaporate spontaneously in a warm place.

In the U. S. P. 1890, the drug was extracted with stronger ether. This was changed in the present pharmacopoeia to acetone (except for cubeb, when alcohol is used) which is a liquid of great solvent power and is exceedingly volatile. Its solvent powers are similar to those of both alcohol and ether.

All oleoresins should be preserved in well-stoppered bottles.

The oleoresins of the market are inclined to be of somewhat uncertain character. Some are said to be with alcohol, wood spirit, benzin, ligroin, or other menstruum; or, if ether be used, this may be imperfectly evaporated.

The oleoresins were formerly classed with the fluid extracts. They are now still frequently known as "ethereal extracts," although of course this name is now inappropriate.

Oleoresin of Capsicum. (Ethereal Extract of Capsicum.)

Prepare according to the general process (see Oleoresins). After all the acetone has evaporated, pour off the liquid portion, transfer the remainder to a glass funnel provided with a pledget of cotton and when the separated fatty matter (which is to be rejected) has been completely drained, mix the liquid portions together.—U. S. P.

Keep the product in a well-stoppered bottle.

Oleoresin of Cubeb. (Ethereal Extract of Cubeb—Extractum Cubebærum—Extract of Cubeb.)

I.

Prepare according to the general process (see Oleoresins), but using the drug in No. 30 powder, and using alcohol as the menstruum instead of acetone.

Keep the product in well-stoppered bottles.—U. S. P.

This preparation deposits, after standing for some time, a waxy and crystalline matter, which should be rejected, only the liquid portion being used.

II. The corresponding preparation of the Germ. Pharm. called extract of cubeb is prepared as follows:

Cubeb, coarse powder.....av.oz. 20
Stronger etherfl.oz. 65
Alcoholfl.oz. 55

Macerate the drug with a mixture of 39 fluidounces of the ether and 33 of alcohol for 3 days at a temperature of 15 to 20 deg. C., agitate occasionally, and express. Macerate the marc with the remainder of the ether and alcohol as before and again express. Mix the two liquids, filter, and evaporate the filtrate on a water bath to a thin extract.

The yield is about 17 or 18 per cent.

Oleoresin of Ginger. (Ethereal Extract of Ginger—Piperoid.)

Prepare according to the general process (see Oleoresins), but using the drug in No. 60 powder.

Keep the product in a well-stoppered bottle.—U. S. P.

Oleoresin of Lupulin. (Ethereal Extract of Lupulin.)

Prepare according to the general process (see Oleoresins), but using the drug without further grinding, and, owing to the large proportion of extractive in the drug, it should be packed dry and very lightly in the percolator.—U. S. P.

Keep the product in a well-stoppered bottle.

Oleoresin of Male Fern. (Oleorsin of *Aspidium*—*Oleoresina Filicis*—*Extractum Filicis Liquidum*—*Liquid Extract of Male Fern*—*Ethereal Extract of Male Fern*—*Oleum Filicis Maris*—*Oil of Fern*—*Extractum Filicis*—*Wurmfarne-extrakt* or *Oel*.)

I. U. S. P.:

Prepare according to the general process (see Oleoresins), from drug which has recently been reduced to No. 40 powder. Keep the product in well-stoppered bottles.

This oleoresin usually deposits, on standing, a granular, crystalline precipitate, consisting of filicic acid, which should be thoroughly mixed with the liquid portion before use.

II. The corresponding preparation of the Brit. Pharm., called liquid extract of male fern, is directed to be prepared by exhausting male fern, in No. 20 powder, with stronger ether, by percolation, evaporating the ether from the clear percolate on a water bath or by distillation, until an oily extract remains.

III. The corresponding preparation of the Germ. Pharm., called *extractum filicis*, is prepared as follows:

Male fern, coarse powder. av.oz. 20

Stronger ether. fl.oz. 135

Macerate the drug with 81 fluidounces of the ether for 3 days, at a temperature of 15 to 20 deg. C., agitating occasionally, decant the clear liquid, macerate the marc with the remainder of the ether for 3 days as before, express, mix the two liquids, filter, and evaporate the filtrate on a water bath to a thin extract free from the odor of ether.

Oleoresin of Pepper. (Oleoresin of *Black Pepper*—*Ethereal Extract of Pepper*—“*Oil of Black Pepper*.”)

Prepare according to the general process (see Oleoresins). The spontaneous evaporation of acetone is to be continued until all of it has evaporated, and until the deposition of crystals of piperin has ceased; then the oleoresin is to be separated from the crystals by straining

through purified (absorbent) cotton.—U. S. P.

Keep the product in a well-stoppered bottle.

The commercial article known as “oil of black pepper” is similar to the above; it is said to be a by-product in the manufacture of piperin.

Oleosaccharates.

See Oil-Sugars.

Opium, Deodorized. (*Denarcotized Opium*.)

Opium, powdered, containing 12 to 12½ p. c. of crystallized morphine, any desired quantity.

Purified petroleum benzin. . sufficient

Macerate the opium for 24 hours in a wide-mouthed, well-closed bottle with enough of benzin to cover it, shaking occasionally. Decant the liquid as closely as possible and repeat the treatment with benzin. Again decant the liquid and pour the contents of the bottle into a plain filter contained in a glass funnel which should be well covered; drain, and then percolate the residue slowly with benzin until the latter passes without color. Remove the filter containing the opium from the funnel and expose the powder to the open air that it may dry thoroughly.—U. S. P.

Opium in coarser powder may be deodorized in the same manner.

Deodorized opium should be kept in well-stoppered bottles and should contain not less than 12 nor more than 12½ per cent. of crystallized morphine.

In the U. S. P. 1890, the opium was deodorized with stronger ether.

Opium, Granulated.

Opium dried at a temperature not exceeding 85 deg. C. and reduced to coarse (No. 20) powder.

It should yield when assayed not less than 12 nor more than 12½ per cent. of crystallized morphine. Granulated opium of a higher percentage may be brought within these limits by admixture with a granulated opium of a lower percentage in proper proportions.—U. S. P.

Opium, Powdered.

Opium, dried at a temperature not exceeding 85 deg. C. and reduced to a very fine (No. 80) powder.

Powdered opium, for pharmaceutical or medicinal purposes, should yield not less than 12 nor more than 12½ per cent. of crystallized morphine. Any powdered opium of a higher percentage morphine strength may be brought within these limits by admixture with powdered opium of a lower percentage or powdered sugar of milk, in proper proportions.—U. S. P.

Opodeldoc.

For solid opodeldoc, see Liniment, Soap, Camphorated; for liquid opodeldoc, see Liniment, Soap.

Ox-Gall, Purified and Inspissated. (Fel Bovis or Tauri—Extractum Felle Bovini—Purified Ox Bile.)

I. Purified, recognized by U. S. P. 1900:

Fresh ox-gallfl.oz. 6
Alcoholfl.oz. 2

Evaporate the ox-gall in a tared porcelain dish on a water bath to about 2 av.ounces, then add to it the alcohol, mix well, let stand well covered for 3 or 4 days, then decant the clear solution, filter the remainder, and having mixed the liquids and distilled off the alcohol, evaporate the remainder to a pilular consistence.

A powder may be obtained by evaporating to dryness and powdering the residue.

II. The inspissated of the U. S. P. 1880, not recognized by the present U. S. P., was to be made by heating 20 av.ounces of ox-gall to a temperature not exceeding 80 deg. C., straining through muslin, and evaporating the colature on a water bath, in a porcelain capsule, to 3 av.ounces.

No. I is to be preferred.

III.

Ox-gall, freshfl.oz. 16
Alcoholfl.oz. 8

Evaporate the gall to 4 fluidounces, add the alcohol, shake thoroughly, set

the mixture aside until the solid matter has subsided, decant the clear solution, filter the remainder, washing the filter and contents with a little more alcohol. Distil off most of the alcohol from the mixed liquids, evaporate the residue in a porcelain dish, by means of a water bath, to the consistence of thick extract.—Brit. Pharm.

Oxymel. (Simple Oxymel.)

Acetic acid, 35 p. c.fl.oz. 1
Clarified honey, liquefied...av.oz. 9
Distilled watersufficient

Mix the honey with the acid and about 10 fluidrams of distilled water, or sufficient to produce a preparation having the sp. gr. 1.32.—Brit. Pharm.

Oxymel of Squill.

I.

Vinegar of squill.....fl.oz. 6
Honeyav.oz. 10

Mix them in a tared porcelain capsule or enameled iron vessel, and apply the heat of a water bath until the mixture has been reduced to the weight of 10 av.ounces. Then strain, allow it to cool, and transfer it to bottles, which should be well corked.—N. F.

The Brit. Pharm. 1885 directed that the mixture be evaporated until the product, when cold, shall have a specific gravity of 1.32.

The Germ. Pharm. directs a mixture of 1 part by weight of vinegar of squill to be mixed with 2 parts clarified honey, evaporated on a water bath to 2 parts, and strained.

II. The Brit. Pharm. 1898 has an improved process requiring no evaporation, as follows:

Squill, bruisedav.oz. 1
Acetic acid, 36 p. c.fl.dr. 7
Distilled waterfl.oz. 3¼
Clarified honey, liquefied...sufficient

Macerate the squill for 7 days in a mixture of the acid and water, then express strongly, and filter. Mix the product, which should measure approximately 3¼ fluidounces, with 10¼ fluidounces of the honey, or enough to produce a preparation having the sp. gr. 1.32.

Papers. (Chartæ.)

Papers of the U. S. P. consist of paper either saturated with or coated with some substance. They are used by ignition or by application. The U. S. P. also recognizes some test-papers, which are mentioned here.

Paper, Asthma (or Antasthmatic Paper).

Potassium nitrate	av.oz.	1¾
Extract of stramonium.....	av.oz.	1
Sugar	av.oz.	2
Water, hot	fl.oz.	10

Dissolve the solids in the water, strain the solution, impregnate white filter paper with it, and dry the paper.—Germ. Form.

Paper, Cantharides. (Blistering or Vesicating Paper.)

White wax	av.oz.	2
Olive oil	av.oz.	1
Spermacei	av.oz.	¾
Balsam of fir.....	av.oz.	¼
Cantharides, No. 40 powder.....	av.oz.	¼
Water	fl.oz.	2½

Mix all the substances in a tinned vessel, and boil gently for 2 hours, constantly stirring. Strain through a woollen strainer without expressing, and, by means of a water bath, keep the mixture in a shallow, flat-bottomed vessel with an extended surface. Coat strips of sized paper with the melted plaster, on one side only, by passing them successively over the surface of the liquid; when dry, cut the strips into rectangular pieces.—N. F. Appendix and U. S. P. 1880.

Paper, Litmus.

Blue.—Impregnate strips of white, un-sized paper, free from wood pulp, but not too porous, with litmus test solution (see Solution, Litmus), and dry the strips by suspending them on strings of clean twine in an atmosphere free from acid or ammoniacal vapors.—U. S. P.

Red.—Add to the test solution of litmus used to impregnate the paper just sufficient of a highly diluted solution of hydrochloric acid to impart to it a faint red tint. Then with this solution

prepare the paper the same as the blue.—U. S. P.

Neither red nor blue litmus paper should have a very intense color.

Preserve in bottles so as to exclude dust and acid or ammoniacal vapors.

Paper, Mustard.

I.

Mustard, black, No. 60 powd.....	av.oz.	1
India-rubber	gr.	45
Benzin, carbon disulfid,		
each	sufficient	

Pack the mustard in a conical percolator, and gradually pour benzin upon it until the percolate ceases to produce a permanent, greasy stain upon blotting paper. Remove the powder and dry it by exposure to the air. Having meanwhile dissolved the rubber in a mixture of 1 fluidounce each of benzin and carbon disulfid, mix the purified mustard with enough of this mixture to produce a semi-liquid magma and apply this by means of a suitable brush to one side of a piece of rather stiff, well-sized paper, so as to cover it completely, and then allow the surface to dry.—U. S. P.

The percolation of the mustard with benzin is for the purpose of removing the fixed oil present in the former.

A surface of 9 square inches should contain about 60 grains of mustard.

Before the paper is applied to the skin, it should be dipped in warm (not hot) water for about 15 seconds.

II.

Black and white mustard	
seeds.....	equal parts by weight
Benzol, solution of India	
rubber, each	sufficient

Bruise the seeds and extract the fixed oil by percolation with benzol. Dry the residue by exposure to the air in a warm closet and reduce to No. 60 powder. Mix 80 grains of the purified mustard with 5 fluidrams of the rubber solution and spread by means of a suitable brush over about 30 square inches of one side of a piece of a cartridge paper. Allow to dry by exposure to the air.

The solution of India-rubber (liquor caoutchouc) is prepared from 1 av.ounce

of India rubber, cut into fine shreds, and placed in a well-stoppered bottle with a mixture of $9\frac{1}{2}$ fluidounces each of benzol and carbon disulfid. Set aside in a cool place and agitate occasionally until the rubber is dissolved.—Brit. Pharm.

III. The Germ. Pharm. recognizes this preparation, but gives no process for it, merely describing it as paper covered with finely powdered mustard freed from oil.

Paper, Phenolphthalein.

This is prepared by impregnating white, unsized paper with the test-solution and drying it.—U. S. P.

Paper, Potassium Nitrate. (Charta Nitrata—Asthma Paper.)

Potassium nitrateav.oz. 1

Distilled waterfl.oz. 4

Dissolve the salt in the water, immerse strips of white, unsized paper (such as filter or blotting paper) in the solution, and dry them.—N. F. Appendix and U. S. P. 1890.

Keep the paper in well-closed vessels.

This is used as a relief for asthma, the paper being ignited and the fumes thereof inhaled.

The directions of the Germ. Pharm. are practically the same; it directs 1 part by weight of potassium nitrate and 5 of water.

See also Paper, Asthma.

Paper, Turmeric.

Impregnate white, unsized paper with tincture of turmeric, and dry it.—U. S. P.

This is a test paper which turns brown with alkalis, the yellow color being restored by acids. Boric acid, however, even in the presence of hydrochloric acid, turns the color to reddish brown, and this is changed to bluish-black by ammonia.

Paraffins.

The paraffins are the residues of petroleum after the distillation of naphtha, kerosene, etc. These paraffins vary in consistence and melting point from the

liquid form to the hard, wax-like form, intermediate forms being of a soft-solid consistency. These different forms appear in the market in various degrees of purity, partially purified ones appearing more or less dark yellowish, the purest forms being white or colorless, and nearly odorless and tasteless. The pure forms only are recognized by the pharmacopeia.

The liquid form, known as paraffin oil, petrolatum oil, or liquid petrolatum is recognized by the German, British, French, Norwegian and Danish pharmacopeias and the U. S. P. The U. S. P. requires a sp. gr. of 0.870 to 0.940 at 25 deg. C., the Germ. Pharm. not less than 0.880 at 15 deg. C., the Norw. and Dan. Pharm. 0.895 to 0.905, the Brit. Pharm. 0.885 to 0.890, and the Codex 0.800 to 0.820.

The white, wax-like form, called paraffin wax or hard or solid paraffin, or usually simply paraffin (this term is used in this work) appears in the market of different melting degrees, viz., 116, 120, 125, 130 and 136 deg. F. (47, 49, 52, 55 and 58 deg. C.). The Dan. and Norw. Pharm. do not recognize it at all; the U. S. P. requires a melting point of 125 to 135 deg. F. (51.6 to 57.2 deg. C.), the Brit. Pharm. 130 to 135 deg. F. (54.4 to 57 deg. C.), the Germ. Pharm. 165 to 176 deg. F. (74 to 80 deg. C.), and the Codex mentions 44 to 65 deg. C.

The intermediate form, the so-called petrolatum, soft paraffin or petroleum ointment appears in the market in white and yellow and darker forms, and of varying soft or semi-solid consistence. In this country the light yellow variety, the so-called amber, is commonly employed, unless otherwise specified. The U. S. P. recognizes two kinds, a yellow and a white, the former being called "petrolatum," the latter "white petrolatum." They should melt at a temperature between 113 and 118 deg. F. (45 to 48 deg. C.). The Brit. Pharm. speci-

fies a melting point of 96 to 102 deg. F. (35.5 to 39 deg. C.), or even somewhat higher, the Codex a melting point of 104 deg. F. (40 deg. C.), the Norw. Pharm. the same, and the Danish Pharm. a melting point of 95 deg. F. (35 deg. C.).

The dark yellow or brownish forms of petrolatum will suffice for veterinary purposes.

Instead of petrolatum, the Germ. Pharm. recognizes a mixture of paraffin wax and liquid paraffin (see Ointment, Paraffin) which melts between 104 and 122 deg. C. (40 to 50 deg. C.).

The paraffin ointment of the Brit. Pharm. is a mixture of petrolatum and paraffin wax. It melts at about the same temperature as that of the Germ. Pharm. is a mixture of petrolatum and when used as the vehicle of white ointments, it should be prepared with white petrolatum; and when used in colored ointments, it should be prepared with yellow petrolatum.

Paste, Canquoin's. (Canquoin's Cautic—Pate de Canquoin.)

Zinc chlorid	av.oz. 1
Zinc oxid	av.oz. $\frac{1}{4}$
Wheat flour	av.oz. $\frac{3}{4}$
Distilled water	fl.dr. 1

Mix well so as to make a paste, form into pencils, and dry.

Preserve in well-stoppered bottles or vessels containing some quicklime.—Codex.

The zinc chlorid should be dry. The flour should previously have been dried at a temperature of 100 deg. C.

Mixtures of 1 part of zinc chlorid with 2, 3, 4 and 5 parts of wheat flour are also used under the name Canquoin's Paste, different strengths being used. The zinc chlorid is to be reduced to very fine powder, incorporated with half the flour, made into a thin dough, mixed with the remainder of the flour, roll the mass into flat plate, and roll this into a cylinder.

Paste, Carbolic. Listers.

Carbolic acid, crystal.....	av.oz. 1
Linseed oil, raw	av.oz. 4
Prepared chalk	sufficient

Dissolve the acid in the oil and add sufficient chalk to make a soft paste. —H.

Paste, Currant. (Currant Jelly.)

Black-currant paste is used in the London Throat Hospital, and now elsewhere, as a vehicle, instead of gums, etc., for throat lozenges of certain kinds such as have been used under the direction of Sir Morrell Mackenzie.

The directions of the Hospital Pharmacopeia for preparing it are as follows: Take 7 pounds of black currants and 20 fluidounces of water, boil together, crushing the berries with a pestle until the mixture is thoroughly pulped, then pass through a sieve and beat into a paste with 3 or 4 pounds of powdered sugar.

Red-currant paste may be made in the same manner from red currants.

Another formula, probably a better one, is the following:

Take fully ripe currants, either red or black, whichever may be wanted; put them into a suitable dish, bruise them and place them on the fire, stirring constantly with a wooden spatula until they become scalding hot, carefully avoiding scorching. When reduced to a pulp, remove from the fire, and strain and express all the juice with a thick flannel cloth or a crash towel. Measure the juice into a clean and bright copper basin, or, still better, a porcelain-lined basin; place upon the fire and boil for 10 or 15 minutes in order to evaporate some of the water; remove the scum, and add 1 pound of sugar for each pint of juice. Stir constantly with a wooden spatula until the sugar is dissolved; then remove the scum and immediately fill the jelly glasses, or other suitable vessels.

Pastes, Dermatologic.

Dermatologic pastes are medicaments for external use, suggested by the prac-

tice of noted dermatologists (Lassar, Unna and others). They are ointment-like mixtures of starch, dextrin, zinc oxid, sulfur or calcium carbonate made into a paste with glycerin, soft (green) soap, petrolatum, lard or other fat, medicated with antiseptic and astringent agents.—N. F.

Seven of these preparations are mentioned by the N. F.

Dextrinated paste (see Paste, Dextrinated) is the vehicle for some of these pastes.

See also Paste Pencils.

Paste, Dextrinated.

Dextrinpart 1
Glycerinpart 1
Distilled watersufficient

Dissolve the dextrin in the glycerin and 1 part of water by heat, and then add enough water, if necessary, to make 3 parts.—N. F.

This is a general vehicle for many medicated pastes used in dermatology.

Paste, Ichthyol, Unna's.

Ichthyolpart 1
Dextrinated pasteparts 3
Mix.—N. F.

Paste, Kaolin.

See Cataplasm of Kaolin.

Paste, Lead, Unna's.

Rice starchav.oz. 1
Lithargeav.oz. 3
Glycerinav.oz. 3
Diluted acetic acid.....fl.oz. 6

Mix the two powders, incorporate the glycerin, add the acid, and heat on a water bath, stirring frequently, until the mixture is reduced to a weight of 8 av.ounces.

Paste, London.

See Soda with Lime.

Paste, Naphthol, Lassar's.

Betanaphthol, very fine powderpart 1
Petrolatumparts 2
Soft (green) soap.....parts 2
Precipitated sulfurparts 5

Triturate the betanaphthol and sulfur with the petrolatum and then incorporate the green soap with the mixture.—N. F.

Paste Pencils.

This is a form of medication similar to pastes, but partaking of the form of pencils. See Pencils, Paste.

Paste, Resorcin, Mild, Lassar's.

Resorcinpart 1
Zinc oxidparts 2½
Starchparts 2½
Liquid petrolatumparts 4

Thoroughly levigate the zinc oxid with enough liquid petrolatum to make a thin paste. Reduce the resorcin to very fine powder, mixed with the starch, and add the mixture to zinc oxid paste, triturating until a uniformly smooth mixture is obtained. Then add the remainder of the liquid petrolatum, and incorporate it thoroughly.—N. F.

There is also a stronger resorcin paste which is to contain double the proportion of resorcin.

Paste, Vienna.

See Potassa with Lime.

Paste, Ward's.

Thomsonian (from Comfort's Practice):

Black pepper, powder.....av.oz. 2
Elecampane, powderav.oz. 2
Fennel, powderav.oz. 1
Honeyav.oz. 4
Sugarav.oz. 4

Mix and make into a paste.

This is an old-time and celebrated remedy for piles. A piece as large as a chestnut is to be taken 4 or 5 times daily.

Paste, Wax.

Yellow waxav.oz. 3½
Cocoonut oilav.oz. 1
Wool fat, hydrous.....av.oz. 1
Boraxgr. 55
Distilled waterfl.oz. 7¼

Melt the wax, add the oil and wool fat, then gradually incorporate the water in which the borax has previously been dissolved.—D.

This is used as an ointment vehicle.

Paste, Zinc, Lassar's. (Lassar's Zinc-Salicyl Paste.)

Salicylic acid, fine powder...gr. 20
Zinc oxidgr. 240
Starchgr. 240
White petrolatumgr. 500

Thoroughly levigate the zinc oxid with a portion of the petrolatum, then add the acid, starch and remaining petrolatum, and triturate until a perfectly smooth mixture is obtained.—N. F.

Paste, Zinc, Soft, Unna's.

Zinc oxidpart 1
Calcium carbonatepart 1
Linseed oilpart 1
Lime waterpart 1

Thoroughly levigate the zinc oxid and calcium carbonate with the oil, gradually added, so as to form a perfectly smooth mixture; then incorporate the lime water by trituration.—N. F.

Paste, Zinc-Oil, Lassar's.

Zinc oxid, pure.....av.oz. 3
Olive oilav.oz. 2
Mix thoroughly.—D.

Paste, Zinc-Dermatol, Unna's.

Dermatolav.oz. 1
Zinc oxidav.oz. 1
Wool fat, hydrous.....av.oz. 2
Linseed oil, raw.....sufficient

Rub the dermatol and zinc oxid together with the oil to a paste and add the wool fat.—D.

Paste, Zinc-Sulfur, Unna's.

Zinc oxidparts 3
Precipitated sulfurparts 2
Silicic acid (silica)part 1
Benzoinated lardparts 14

Thoroughly levigate the zinc oxid with a small portion of the benzoinated lard, the silica with another, and the sulfur with a third portion. Mix the three portions until a uniformly smooth mixture results and thoroughly incorporate the remainder of the lard.—N. F.

Paste, Zoll's Pink.

This is said to be prepared as follows:

Sandalwood oilpart 1
Oil of copaibaparts 3
Oil of turpentine.....parts 4
Sugarparts 8
Acaciaparts 8
Mix and rub up together.

This is used in some hospitals.

Pastilles, Glyco-Gelatin.

The London Throat Hospital uses—a

form of troche called glyco-gelatin pastilles. The vehicle for these is to be prepared as follows:

Gelatin, pureav.oz. 1
Glycerinav.oz. 2½
Orange flower water.....av.oz. 2½
Solution of carmine, sufficient to color as desired.

The gelatin is to be soaked in the water for 2 hours, the mixture is to be heated on the water bath until the gelatin is dissolved, the glycerin is to be added, and finally the carmine solution.

The medication of the pastilles is accomplished by warming a sufficient quantity of the above glyco-gelatin on a water bath, then incorporating the medicament, previously rubbed to a thick paste with glycerin if it be a solid, stirring till somewhat cool, and making into square or round or pastilles, preferably the latter, which may be formed in a suitable mold, which latter should be slightly oiled before used.

The medicament, if it be a solid, must be rubbed to an impalpable powder with the glycerin before incorporating with the vehicle. Most of the medicaments are in solid form and hence this method of incorporation applies in most instances. Sometimes the medicament may or should be otherwise incorporated. Carbolic acid may be dissolved in a small amount of glycerin by the aid of a gentle heat. Water-soluble substances like ammonium chlorid may be triturated with glycerin or they may be dissolved in the water used to make the glyco-gelatin vehicle. Substances like menthol may be incorporated by dissolving in as small amount of alcohol and adding this solution to the melted vehicle.

Other flavors may be used in the glyco-gelatin vehicle besides orange flower water, such as rose or tolu water. The carmine coloring may be omitted if desired.

Most of the troches (see Troches) may be made into glyco-gelatin pastilles if desired.

Pellets, Homeopathic.

See Medications, Homeopathic.

Pencils, Cocaine, 5 per cent.

Cocaine hydrochloridpart 1
 Tragacanthpart 1
 Starchparts 7
 Dextrinparts 7
 Sugarparts 4
 Distilled water, to make a firm plastic mass.

All solids should be in fine powder.
 —N. F.

See Pencils, Paste, for method of preparing these pencils.

1 av.ounce of this material makes about 15 pencils.

Pencils, Iodoform. (Bacilli Iodoform.)

Iodoform, fine powder....parts 10
 Cocoa butterparts 9
 Castor oilpart 1

Mix all in a gently warmed mortar, and when the mass has partially cooled, suck it into glass tubes having a lumen of $\frac{1}{8}$ inch, place these in cold water, push the mass out when cold, and cut it into pencils about $2\frac{1}{2}$ inches long.—Germ. Form.

The pencils may also be prepared by mixing the cocoa butter in a grated condition with the oil and iodoform, adding a little more oil if necessary, until a suitable mass is obtained, then rolling out on a pillboard or tile like a pill mass, and cutting into required lengths.

Pencils, Menthol. (Migraine Pencils—Stilus Mentholi.)

These may be prepared by carefully melting pure menthol and pouring into tin molds having about the form of an ordinary thimble, in which it is allowed to crystallize at a low temperature, usually by placing in an ice chest or other cold place for 12 hours. The menthol cone is removed from the molds, attached to a handle and preserved in a convenient form for use. A good cone should be made only of pure menthol, as even so small a quantity as 2 per cent. of thymol, which addition has been recommended, will render them greasy. The cone may be attached to the holder

with some liquid glue or solution of glue in hot water.

Pencils, Paste. (Medicated Pencils—Stilus dilubilis—Pasten Stiften.)

These pencils are for the direct application of medicinal agents to the skin, suggested by Dr. Unna, and used in modern dermatologic practice. The medicinal agent is incorporated with a paste consisting of starch, dextrin, tragacanth and sugar [all solids used should be in very fine powder] with enough distilled water to form a plastic mass. This is rolled into cylinders of about $1\frac{1}{5}$ inch diameter which are cut into sections 2 inches long, dried on parchment paper at the room temperature and wrapped in tin-foil.—N. F.

Pencils of cocaine and salicylic acid are recognized by the N. F. Other medications used are ichthyol, pyrogallol, mercuric chlorid, zinc oxid, etc.

Pencils, Salicylic Acid, 10 per cent.

Salicylic acidparts 2
 Tragacanthpart 1
 Starchparts 6
 Dextrinparts 7
 Sugarparts 4
 Distilled water, to make a firm plastic mass.

All solids should be in fine powder.
 —N. F.

See Pencils, Paste, for method of preparing these pencils.

1 av.ounce of this material makes 12 or 13 pencils.

Pepsin, Aromatic.

Saccharated pepsingr. 480
 Aromatic fluid extract.....m. 30
 Tartaric acidgr. 8
 Sodium chloridgr. 8

Mix the ingredients by trituration, dry the product by exposure to warm air, and keep it in well-stoppered bottles.

—N. F.

Pepsin, Saccharated.

Pepsin (1:3000)av.oz. 1
 Sugar of milk, recently dried,
 in No. 30 powder.....av.oz. 9

Triturate the pepsin with the sugar of milk to a fine, uniform powder.

Keep the product in well-stoppered

bottles.—N. F. Appendix and U. S. P. 1890.

A weaker pepsin than a 1 to 3000 may be employed for this mixture if proportionately more of it be used and correspondingly less milk sugar.

Petrolatum. (Soft Paraffin—Petroleum Ointment.)

See Paraffins.

Petrolatum, Saponated, Liquid. (Liquid Petrox.)

Liquid petrolatum, U. S. P. parts 4
Oleic acid, U. S. P. parts 2
Spirit of ammonia, U. S. P. part 1
Mix them by agitation.

This forms a yellow, oily liquid in which iodine, salol, salicylic acid, and many of the alkaloids dissolve readily. It mixes readily with chloroform and with volatile oils, and forms a permanent emulsion with water, in almost any proportion, before and after such addition. —N. F.

Petrolatum, Saponated, Solid. (Solid Petrox.)

Petrolatum, yellow, U. S. P. parts 4
Oleic acid, U. S. P. parts 2
Spirit of ammonia, U. S. P. part 1

Melt the petrolatum on a water bath, add the acid, and stir the mixture until it has cooled almost to the point of congealing, then add the spirit of ammonia while stirring, and continue to stir until the mixture is cold.

This has all the properties of liquid saponated petrolatum (see Petrolatum, Saponated, Liquid), except consistency, and affords an admirable ointment vehicle. —N. F.

Physic, White Liquid. (Dow's Physic.)

Sodium sulfate av.oz. 4
Water fl.oz. 12
Nitric acid fl.dr. 4
Hydrochloric acid fl.dr. 4
Alum gr. 34

Dissolve the alum and sodium sulfate in the water, filter, and add the other ingredients.—Eclectic.

This is recommended for dysentery.

Pills. (Pilulæ.)

The pills enumerated here are made

according to the methods usually approved.

The mass for pills of the U. S. P. and nearly all other pharmacopœias is usually divided into the appropriate number or size, while in the case of the Brit. Pharm. it is usually allowed to remain as such, the same to be divided as required. The "pills" of the Brit. Pharm. are, therefore, strictly speaking, "masses." The dose of these "pills" is stated by this work. In looking up Pills, compare same with Masses.

Pills, Abernethy's.

See Abernethy's Remedies.

Pills of Aconite, Compound.

Each pill should contain—

Extract of aconite leaves. gr. $\frac{1}{2}$
Extract of stramonium leaves. gr. $\frac{1}{15}$
Quinine valerianate gr. $\frac{1}{3}$

—Eclectic.

Pills, Aloes.

Each pill should contain—

Aloes, purified gr. 2
Soap, castile gr. 2

Each of these is to be in fine powder, and the mixture is to be massed with water.—U. S. P.

The Brit. Pharm. recognizes Pill of Barbadoes Aloes, which is made from 2 av.ounces of barbadoes aloes, 1 of castile soap, 1 or sufficient of confection of rose, and 1 fluidram of oil of caraway. The dose is 4 to 8 grains.

The same work also recognizes a Pill of Socotrine Aloes, which is made like the preceding except that socotrine aloes is used instead of the barbadoes, and oil of nutmeg instead of oil of caraway. Dose, 4 to 8 grains.

Pills of Aloes and Asafetida.

Each pill should contain—

Aloes, purified gr. $1\frac{1}{3}$
Asafetida gr. $1\frac{1}{3}$
Soap, castile gr. $1\frac{1}{3}$

Beat with sufficient water to form a mass.—N. F. Appendix and U. S. P. 1890.

Only select tears of asafetida should be used for the above.

Pill of aloes of asafetida, Brit. Pharm.,

is made from 1 av.ounce each of socotrine aloes, asafetida, and castile soap, and 1 av.ounce or sufficient of confection of rose. Dose, 4 to 8 grains.

Pills of Aloes, Compound. (Antidyspeptic Pills.)

Aloes	gr. 240
Gamboge	gr. 120
Castile soap	gr. 120
Extract of boneset	gr. 60
Extract of mandrake	gr. 60
Extract of ginseng	gr. 60
Capsicum	gr. 30
Lobelia seed	gr. 30
Oil of clove	m. 1

Make a mass and divide into pills weighing 4 grains each.—Eclectic.

Another formula is also used, as follows:

Aloes, socotrine	gr. 240
Extract of gentian	gr. 240
Castile soap	gr. 120
Colocynth	gr. 120
Gamboge	gr. 120
Oil of clove	m. 15

Divide like the preceding.

This is said to be the formula originally employed.

Pills of Aloes and Iron. (Ferrated Aloetic Pills.)

Each pill should contain—

Aloes, purified	gr. 1
Ferrous sulfate, dried	gr. 1
Aromatic powder	gr. 1

Confection of rose, enough to make a mass.

—U. S. P.

Pill of aloes and iron, Brit. Pharm., is made from 1 av.ounce of dried ferrous sulfate, 2 of barbadoes aloes, 3 of compound powder of cinnamon, and 3 or sufficient of syrup of glucose. Dose, 4 to 8 grains.

The Ferrated Aloetic Pills, Germ. Pharm., are made from equal parts by weight of dried ferrous sulfate and aloes, "massed" with spirit of soap, and divided into 1½-grain pills.

Pills of Aloes and Mastic. (Dinner Pills—Lady Webster's Dinner Pills—Lady Hesketh's Dinner Pills—Crespigny's Pills.)

Each pill should contain—

Aloes, purified	gr. 2
Mastic	gr. 3/5
Red rose petals, fine powder	gr. ½

Beat with diluted alcohol to form a mass.—U. S. P.

Pills of Aloes and Myrrh. (Rufus's Pills.)

Each pill should contain—

Aloes, purified	gr. 2
Myrrh	gr. 1
Aromatic powder	gr. 3/5

Make into a mass with simple syrup.

—U. S. P.

Pill of aloes and myrrh, Brit. Pharm., is made from 2 av.ounces of socotrine aloes, 1 of myrrh, and 2½ or sufficient of syrup of glucose. Dose, 4 to 8 grains.

Pills of Aloes and Podophyllum, Compound. (Janeway's Pills—Compound Pills of Podophyllin.)

Each pill should contain—

Aloes, purified	gr. 1
Resin of podophyllum	gr. ½
Extract of belladonna leaves	gr. ¼
Extract of nux vomica	gr. ¼

—N. F.

Pills of Aloin, Compound.

Each pill should contain—

Aloin	gr. ½
Resin of podophyllum	gr. ¼
Extract of belladonna leaves	gr. ¼

—N. F.

Pills of Aloin, Strychnine and Belladonna.

Each pill should contain—

Aloin	gr. 1/5
Strychnine (alkaloid)	gr. 1/120
Extract of belladonna leaves	gr. ¼

—N. F.

These pills are also prepared with double the amount of strychnine. It is recommended that the stronger pills be dispensed only when specially demanded. However, the pill usually dispensed, the so-called No. 1, does contain 1/60 gr. of strychnine. Aloin, strychnine and extract of belladonna are also combined in proportions other than those given above.

Pills of Aloin, Strychnine and Belladonna, Compound.

Each pill should contain—

Aloin	gr. 1/5
Strychnine (alkaloid)	gr. 1/120
Extract of belladonna leaves	gr. ¼
Extract of cascara sagrada	gr. ½

—N. F.

These pills are also prepared with

double the amount of strychnine. The N. F. recommends that the stronger pill be dispensed only when specially demanded. However, the commercial almost always does contain 1/60 gr. of strychnine.

Pills, Anderson's Scot's.

Formula of the Philadelphia College of Pharmacy:

Each pill should contain—

Barbadoes aloes	av.oz. 6
Soap	av.oz. 1
Colocynth	av.oz. 1/4
Gamboge	av.oz. 1/4
Oil of anise.....	fl.dr. 1
Water	sufficient

Mix the aloes, colocynth and gamboge, previously reduced to very fine powder, add the soap and sufficient water to form a mass, and divide into 3-grain pills.

The pills made by manufacturing houses each contain—

Aloes, purified	gr. 13/5
Colocynth	gr. 4/15
Gamboge	gr. 1/15
Soap	gr. 1/15
Oil of anise.....	gr. 1/30

Pills, Anti-Canker. (Compound Iron Pills.)

This formula appears in some formularies and is credited to Thomsonian practice:

Each pill should contain—

Iron subcarbonate	gr. 2 1/2
Extract of conium.....	gr. 2 1/2

See also Pills No. 3.

Pills, Anti-Catarrhal, Andrews'. (Anti-Grippe or Yellow Pills.)

Each pill should contain—

Quinine salicylate	gr. 1
Arsenous acid	gr. 1/125
Ext. of belladonna leaves....	gr. 1/33

Pills, Anti-Constipation, Carson's.

Each pill should contain—

Extract of cascara sagrada....	gr. 1
Extract of rhubarb.....	gr. 1
Extract of nux vomica.....	gr. 1/4
Aloin	gr. 1/3

Pills, Anti-Constipation, Goss'.

Each pill should contain—

Resin of podophyllum.....	gr. 1/4
Extract of colocynth.....	gr. 1/4
Extract of butternut bark.....	gr. 1/2
Extract of nux vomica.....	gr. 1/8

Extract of henbane.....	gr. 1/8
Extract of gentian.....	gr. 1/4
Extract of cascara sagrada....	gr. 1/4
Apocynum cannab., powder....	gr. 1/2

Pills, Antidyspeptic.

Each pill should contain—

Strychnine (alkaloid)	gr. 1/40
Ipecac	gr. 1/10
Extract of belladonna leaves....	gr. 1/10
Mass of mercury.....	gr. 2
Comp. ext. of colocynth....	gr. 2

—N. F.

See also Pills, Carminative.

Pills, Antineuralgic. (Neuralgia Pills.)

I. Gross':

Each pill should contain—

Quinine sulfate	gr. 2
Morphine sulfate	gr. 1/20
Strychnine (alkaloid)	gr. 1/30
Arsenous acid	gr. 1/20
Extract of aconite leaves....	gr. 1/2

When Antineuralgic Pills, or Neuralgia Pills, without other specification, are prescribed, it is recommended that the above preparation be dispensed. Sometimes the morphine is omitted.—N. F.

II. Brown-Séquard's:

Each pill should contain—

Extract of henbane.....	gr. 2/3
Extract of conium.....	gr. 2/3
Extract of ignatia.....	gr. 1/2
Extract of opium.....	gr. 1/2
Extract of aconite leaves....	gr. 1/3
Extract of Indian cannabis....	gr. 1/4
Extract of stramonium.....	gr. 1/5
Extract of belladonna leaves....	gr. 1/6

Pills, Antimony, Compound. (Plummer's Alterative Pills—Compound Calomel Pills—Compound Pills of Mercurous Chlorid.)

Each pill should contain—

Sulfurated antimony (kermes mineral)	gr. 3/5
Calomel	gr. 3/5
Guaiac resin	gr. 1 1/5
Castor oil	sufficient

Triturate the powders together until well mixed, then mass with the oil which should be very gradually added.—N. F. Appendix and U. S. P. 1890.

The U. S. P. 1880 directed mucilage of tragacanth for massing the powders. Plummer's Pill, Brit. Pharm., is made from 1 avounce each of calomel and

sulfurated antimony, 2 of guaiac resin, 180 grains of castor oil, and 1 fluidram or sufficient alcohol. Dose, 4 to 8 grains.

Pills, Antiperiodic. (Warburg's Pills.)

I. With aloes:

Each pill should contain—

Extract of aloes.....	gr. 1
Rhubarb	1/2
Angelica seed	1/2
Elecampane	1/4
Saffron	1/4
Fennel	1/4
Zedoary	1/8
Cubeb	1/8
Myrrh	1/8
White agaric	1/8
Camphor	1/8
Quinine sulfate	1 2/5
Extract of gentian.....	sufficient

Reduce the drugs to a fine, uniform powder, and make this into pill form by means of extract of gentian.—N. F.

II. Without aloes:

Prepare in the same manner as directed in the previous formula, but omit the extract of aloes. —N. F.

These pills have been introduced for the purpose of facilitating the administration of Warburg's Tincture in a solid form. When Warburg's Pills, or Pills of Warburg's Tincture are prescribed, without further specification, those containing aloes should be dispensed. Those without aloes should be furnished only when they are expressly demanded.

Each Warburg's pill represents about 1 fluidram of Warburg's Tincture, with or without aloes, respectively (see Tincture, Antiperiodic).

Pills, Arsenic, Hebra's.

Each pill should contain

Arsenous acid	gr. 2/25
Extract of licorice, powder...	3/4
Licorice root, powder.....	3/4
Mucilage of acacia.....	sufficient
Roll in lycopodium.—D.	

Pills, Asafetida.

Each pill should contain

Asafetida	gr. 3
Soap, castile, fine powder.....	gr. 1
Make a mass with water.—U. S. P.	
The asafetida should be in select tears.	

Pills of Asafetida, Compound.

Each pill should contain

Asafetida,	
Opium,	
Ammonium carbonate, each...	gr. 4/5

Mix the opium and asafetida together by the aid of a gentle heat and, while soft, incorporate the ammonium carbonate.—Eclectic.

Pills, Asiatic.

Each pill should contain

Arsenous acid	gr. 1/16
Black pepper	gr. 1/2
Mucilage of acacia, to form a mass.	
—Eclectic.	

Pills of Black Colosh, Compound. (Compound Pills of Cimicifuga.)

Each pill should contain

Extract of black cohosh.....	gr. 1
Extract of sculcap.....	gr. 1
Quinine valerianate.....	gr. 1/2
—Eclectic.	

Pills of Camphor, Compound. (Cholera Pills.)

Each pill should contain

Camphor	gr. 1
Opium	gr. 1
Kino	gr. 1
Capsicum	gr. 1/6
Confection of rose.....	sufficient
—Eclectic.	

These pills are given in Asiatic cholera, one pill being given after each discharge from bowels, or oftener, if the urgency of the case demands it.

Pills, Carminative. (Fothergill's Antidyspeptic Pills.)

Each pill should contain

Strychnine sulfate	gr. 1/20
Ipecac	gr. 2/3
Black pepper	gr. 1 1/2
Extract of gentian.....	gr. 1

What are called Modified Carminative Pills, Modified Fothergill's Antidyspeptic Pills, or Fothergill's Tonic and Carminative Pills are each to contain

Strychnine sulfate	gr. 1/50
Ipecac	gr. 2/3
Black pepper	gr. 1/4
Oil of clove.....	gr. 1/20
Extract of gentian.....	gr. 1

Pills, Cascara Cathartic, Hinckle's.
(Hinckle's Comp'd Cascara Pills—Cascarin Comp. Pills.)

Each pill should contain

Cascarin	gr. 1/4
Aloin	gr. 1/4
Podophyllin	gr. 1/6
Extract of belladonna.....	gr. 1/8
Strychnine	gr. 1/60
Gingerine	gr. 1/8

Sometimes 1/2 gr. of extract of cascara is substituted for the cascarin. Gingerine is oleoresin of ginger.

Pills, Catarrh, Hager's. (Pilulæ Antiptilisticæ Hageri—Conchinin Pills.)

Each pill should contain

Chinidine sulfate	gr. 3/4
Gentian root	gr. 5/8
Tragacanth	gr. 3/20
Althea	gr. 1/2
Hydrochloric acid	gr. 3/10

Roll in powdered cassia cinnamon.—

Hager's Manual.

The formula as given Hager's Praxis is as follows:

Each pill should contain

Chinidine sulfate	gr. 3/4
Tragacanth	gr. 1/2
Althea	gr. 1/4
Gentian root	gr. 1/4
Red saunders	gr. 1/12
Glycerin	gr. 9/16
Hydrochloric acid	gr. 9/16

One American manufacturer follows the latter in its essential constituents, but using 3/8 gr. each of quinidine and cinchonidine sulfates for the chinidine, another uses 3/8 gr. each quinine and cinchonidine sulfates for the same.

Pills, Cathartic, Compound. (Antibilious Pills.)

I.

Each pill should contain

Comp. ext. of colocynth.....	gr. 1 1/4
Calomel	gr. 1
Resin of jalap.....	gr. 1/3
Gamboge	gr. 1/4

Make the mass with diluted alcohol.

—U. S. P.

The U. S. P. 1890 directed 1/2 gr. of extract of jalap instead of the resin.

II.

Each pill should contain

Extract of culver's root.....	gr. 3/5
Gamboge	gr. 3/5

Scammony	gr. 3/5
Podophyllin	gr. 3/10
Castile soap	gr. 3/10

Another eclectic formula is 1 gr. each of extract of henbane and extract of culver's root and 1/4 gr. of podophyllin for each pill.

—Eclectic.

Pills, Cathartic, Vegetable. ("Improved" Vegetable Cathartic Pills.)

Each pill should contain

Comp. ext. of colocynth.....	gr. 1
Extract of henbane	gr. 1/2
Extract of leptandra.....	gr. 1/4
Resin of jalap.....	gr. 1/3
Podophyllin	gr. 1/4
Oil of peppermint.....	m. 1/8

Mix the compound extract intimately with the resin of jalap, extract of leptandra, and podophyllin, and then add the oil. Rub the extract of henbane with enough diluted alcohol to render it plastic, incorporate it with the mixture first prepared, then add diluted alcohol to make a mass.—U. S. P.

Pill Coating.

The N. F. has this to say about pills and pill coating:—Pills, in their simplest form, are prepared as required and dispensed with enough dusting powder to prevent them from adhering while still moist; but if they are prepared for stock, or if it is desirable to mask their taste, or for other reasons, they may be coated with some suitable substance that will readily dissolve or disintegrate in the juices of the stomach (sugar, gelatin, chocolate, tolu, silver). In some cases, however, it is desirable to coat the pills with a material which, while insoluble in the acid contents of the stomach (salol, keratin), dissolves readily in the alkaline fluids of the intestines.

I. Gelatin Coating:

The pills, freed from dusting powder, may be dipped in a warm solution of gelatin, the excess removed, and allowed to dry. In extemporaneous pharmacy, it may be convenient to roll the pills into cylindrical shape and insert them into gelatin capsules of suitable size, so

as to completely fill them, observing that here also the dusting powder is completely removed.

II. Sugar Coating:

The pills, freed from dusting powder, may be quickly rolled on a filter paper saturated with mucilage of acacia, until uniformly but superficially moist, then immediately transferred to a porcelain capsule containing a mixture of 4 parts of powdered milk sugar and 1 part of powdered acacia, and rapidly rotated until covered with a firm, white coating.

III. Cocoa Coating:

Moisten the pills with mucilage as in the preceding, then immediately shake with powdered cocoa until well coated, transfer to a clean warmed porcelain capsule, and rotate rapidly until a smooth coating is produced.

IV. Tolu Coating:

The pills, freed from dusting powder, may be dropped into the lid of a porcelain ointment jar (or a porcelain capsule) into which a thin layer of ethereal tincture of tolu has previously been placed and rotated until coated with the tincture. They are then turned into another lid (or capsule) of the same kind and size and rotated for a few moments to remove the excess of tincture, and while the pills are still shining, but not too moist, they are transferred to and rotated until dry in a third lid (or capsule), previously coated with a very thin layer of oil, which has been applied by merely the tips of the fingers. A second or third coating may be applied in the same manner, if necessary.

V. Silver Coating:

The pills, preferably coated with tolu (as described under IV), if moist, are dropped into the lid of a porcelain ointment jar, into which a very thin layer of a mixture composed of equal parts of alcohol, simple syrup, mucilage of acacia and water has been placed, and they are rotated until they have acquired a thin coat of this mixture. They are then dropped into a one-pound ointment jar,

containing the requisite quantity of silver-foil (determined by experience), and the jar is rapidly rotated until the pills are thoroughly coated. This coating may be brightened by transferring the pills to a second jar, containing a few leaves of silver-foil and shaking for some time until thoroughly polished.

VI. Keratin Coating:

The pills, which should not be massed with an aqueous excipient, may be dipped into melted cocoa butter, rolled in finely powdered charcoal, then sprinkled with a suitable quantity of solution of keratin, and rotated until dry. The sprinkling and drying are repeated several times until a sufficiently thick coating of keratin is obtained.

VII. Salol Coating:

The pills, carefully freed from dusting powder, are dropped into a capsule containing enough salol (approximately 1 gr. for every 3-gr. pill), previously melted by the heat of a water bath and allowed to cool so that by passing the hand along the bottom of the dish there is scarcely any warmth felt, and the capsule is then rotated until the pills are coated and the salol has congealed. This process is repeated twice; each time reducing the salol about one-half. Finally a finishing coat is applied by using only enough salol to coat the dish when melted; the dish being now kept quite warm (almost hot), the pills rotated quite rapidly until they are quite shiny, then turned into a cool dish, and the rotation continued until the pills are quite cool.

Pills of Colocynth, Compound. (Pillulae Colocicæ—Cochia Pills.)

Each pill should contain
 Extract of colocynth.....gr. 1-6
 Purified aloesgr. 2
 Resin of scammony.....gr. 2
 Oil of clove.....m. 1/4
 —N. F.

The *Pilula Colocynthidis Composita* of the Brit. Pharm., for which the above is an equivalent, is prepared with colocynth pulp, and contains potassium sul-

fate, which was originally added as an aid to reduce the ingredients to powder. With the use of extract of colocynth, this becomes unnecessary.

The directions of the Brit. Pharm. are to triturate 2 fluidrams of oil of clove with $\frac{1}{4}$ av.ounce of potassium sulfate, in very fine powder, add 1 av.ounce of colocynth pulp, and 2 av.ounces each of barbadoes aloes and resin of scammony, mix well, and incorporate enough water to make a mass. Dose, 4 to 8 grains.

Pills of Colocynth and Henbane.

Each pill should contain

Extract of colocynth.....gr.	1/10
Extract of henbane.....gr.	1 1/2
Purified aloes.....gr.	1 1/2
Resin of scammony.....gr.	1 1/2
Oil of clove.....m.	1/6

The Pilula Colocynthidis et Hyoscyami of the Brit. Pharm. is directed to be made by mixing 2 parts of compound pill of colocynth (see Pill of Colocynth, Compound) with 1 part of extract of henbane, and is directed to be kept as a pill-mass, to be made into pills of such weight as may be directed.—N. F.

Pills of Colocynth and Podophyllum.

Each pill should contain

Comp. ext. of colocynth.....gr.	2 1/2
Resin of podophyllum.....gr.	1/4

—N. F.

Pills, Cook's.

Each pill should contain

Rhubarb.....gr.	1
Aloes.....gr.	1
Calomel.....gr.	1/2
Soap.....gr.	1/2

Pills of Copaiba.

Each pill should contain

Copaiba balsam.....gr.	2
White wax.....gr.	2

—Eclectic.

Pills of Copaiba, Compound.

Mass of copaiba.....gr.	60
Myrrh.....gr.	60
Oleoresin of cubeb.....gr.	30
Extract of nux vomica.....gr.	15
Resin of podophyllum.....gr.	9

Divide into 3-gr. pills.—Eclectic.

Pills, Creosote.

Creosote is very difficult to incorporate into pills unless wax is used, an

objectionable substance because not readily disintegrated in the alimentary canal. Various methods have been suggested to "mass" creosote, but all more or less satisfactory. The following method works quite well.

Make a paste or jelly of

Gelatin.....parts	11
Sugar.....parts	5
Water.....parts	24

Dissolve the gelatin and sugar in the water by the aid of a gentle heat.

This mixture is to be kept on hand and used for making creosote pills. One grain of the jelly will mass one minim of creosote. To make 20 one-minim creosote pills, weigh 20 grains of the jelly, put into a previously warmed mortar so as to liquefy the paste, add the creosote, mix well, and bring to proper pill-mass consistence by adding about 10 grains of powdered extract of licorice and 20 of powdered licorice root. These pills will be of about the size of 2-grain quinine pills. Larger amounts of creosote, of course, acquire a larger proportion of the other substances.

The creosote pills of the Germ. Pharm. are directed to be made as follows:

Creosote, beechwood.....gr.	100
Licorice root, fine powder...gr.	190
Glycerin.....gr.	10

Mix the creosote and licorice root intimately, add the glycerin, make a pill mass, and divide into pills weighing $2\frac{1}{4}$ gr. (0.15 g.); dust with powdered cinnamon.

Pills of Dandelion, Compound.

Extract of dandelion.....gr.	60
Bloodroot.....gr.	60
Podophyllin.....gr.	10
Oil of spearmint.....m.	5

Make into 50 pills.—Eclectic.

These pills are laxative and diuretic, useful in jaundice, kidney and liver diseases, etc., the dose being 1 to 2 pills 3 times a day.

Pills, Dinner.

I. When "Dinner Pills," under this or some other equivalent name, are pre-

scribed without further specification, it is recommended that the Pills of Aloes and Mastic, also called Lady Webster's Dinner Pills, be dispensed.

Of other combinations, bearing similar names, or used for similar purposes, the following appear to be those most commonly in use:

II. Chapman's Dinner Pill:

Each pill should contain

Purified aloesgr. $1\frac{1}{2}$

Masticgr. $1\frac{1}{2}$

Ipecacgr. 1

Oil of fennel.....about m. $1\frac{1}{4}$

The commercial pill usually contains 1 gr. of aloes, mastic and rhubarb.

III. Cole's Dinner Pill:

Each pill should contain

Purified aloesgr. $1\frac{1}{5}$

Mass of mercury.....gr. $1\frac{1}{5}$

Jalapgr. $1\frac{1}{5}$

Tartar emeticgr. $1\frac{1}{50}$

IV. Hall's Dinner Pill:

Each pill should contain

Purified aloesgr. 1

Extract of licorice.....gr. 1

Soap, powdergr. 1

Molassesgr. 1
—N. F.

Pills, Emetic.

Extract of peach leaves, pop-

lar or butternut bark.....oz. 1

Capsicum, powderteaspoonful 1

Lobelia seed, powder.....oz. $\frac{1}{2}$

Ladies' slipper, powder.....

.....teaspoonfuls 2

Oil of pennyroyal, spearmint

or peppermint.....a few drops

Make a mass and divide into pills (number not stated).—Thomsonian (from the *Materia Medica*).

Pills of Galbanum, Comp'd. (Comp'd Pills of Asafetida.)

Each pill should contain

Galbanumgr. $1\frac{1}{2}$

Myrrhgr. $1\frac{1}{2}$

Asafetidagr. $\frac{1}{2}$

Simple syrupsufficient

—N. F. and U. S. P. 1880.

Compound Pill of Galbanum, Brit. Pharm., is made from 2 av.ounces each of galbanum, myrrh, and asafetida, and 1 av.ounce or sufficient syrup of glucose. The gum resins should be used whole; all should be heated together on a wa-

ter bath, stirring until a uniform mass is produced. Dose, 4 to 8 grains.

Pills of Gamboge, Compound.

I.

Each pill should contain

Gambogegr. 1

Scammonygr. 1

Elateriumgr. $1\frac{1}{6}$

Croton oilm. $2\frac{1}{3}$

Extract of henbanesufficient
—Eclectic.

This is the formula as it is given.

II.

Gambogeav.oz. 1

Barbadoes aloesav.oz. 1

Comp. powder of cinnamon.av.oz. 1

Castile soapav.oz. 2

Syrup of glucose.av.oz. 1 or sufficient

Dose, 4 to 8 grains.—Brit. Form.

Pills of Nitroglycerin. (Pills of Glonoin.)

Each pill should contain

Spirit of glonoin.....gr. 1

Altheagr. 1

Confection of rose.....sufficient

Mix the spirit intimately with the powdered althea, expose the mixture for a short time to the air, so that the alcohol may evaporate, then make a pill mass by means of confection of rose.

Each pill contains 1/100 grain of glonoin (nitroglycerin).—N. F.

Pills of Henbane, Compound.

Extract of henbane leaves....gr. 60

Extract of valerian.....gr. 60

Extract of aconite leaves....gr. 30

Quinine sulfategr. 30

Divide into 3-gr. pills.—Eclectic.

These pills are useful in neuralgia, rheumatism, dysmenorrhœa, chorea, etc., giving one every 2, 3 or 4 hours.

Pills, Hooper's Female. (Hooper's Pills.)

Formula adopted by the Philadelphia College of Pharmacy:

Barbadoes aloesav.oz. 8

Ferrous sulfate, dried.....

.....av.oz. 2. gr. 90

Or crystal ferrous sulfate.av.oz. 4

Extract of black hellebore.av.oz. 2

Myrrhav.oz. 2

Castile soapav.oz. 2

Canellaav.oz. 1

Gingerav.oz. 1

Watersufficient

Divide into $2\frac{1}{2}$ -grain pills.

The pills made by manufacturing houses each contain

Aloes, purified	gr. 1
Ferrous sulfate, dried.....	gr. 1/2
Extract of black hellebore....	gr. 1/4
Myrrh	gr. 1/4
Soap	gr. 1/8
Ginger	gr. 1/8
Canella	gr. 1/8

Pills, Imperial. (Kaiser Pillen.)

Various formulas are used for Kaiser Pillen. These pills are purgative; the following may be used:

Resin of jalap.....	gr. 30
Resin of scammony.....	gr. 30
Gamboge	gr. 30
Aloes	gr. 30
Extract of colocynth.....	gr. 6
Soap	gr. 15
Gentian root	gr. 38
Water, enough to make....	pills 100

Sometimes calomel is added.—H.

Pill, Iodin.

Each pill should contain

Iodin	gr. 1/2
Morphine sulfate	gr. 1/10
Burnt sponge	gr. 1

—Eclectic.

Pill of Ipecac with Squill.

Comp. powder of ipecac....	av.oz. 3
Squill	av.oz. 1
Ammoniac	av.oz. 1
Syrup of glucose.....	sufficient

This contains about 5 per cent. of opium.

Dose, 4 to 8 grains.—Brit. Pharm.

Pills of Iron (Ferrous) Carbonate. (Blaud's Pills—Ferruginous Pills —Chalybeate Pills—Iron Pills.)

I.

Ferrous sulfate, granulated..	gr. 250
Potassium carbonate	gr. 125
Sugar	gr. 60
Tragacanth, fine powder....	gr. 15
Althea, No. 60 powder.....	gr. 15
Glycerin, water, each.....	sufficient

Rub the potassium carbonate in a mortar with a sufficient quantity (about 10 drops each) of glycerin and water, then with the ferrous sulfate and sugar, previously rubbed together to a uniform powder, and rub the mass thoroughly until it assumes a greenish color. When the reaction has terminated, incorporate the tragacanth and althea, and, if

necessary, add a little more water so as to obtain a mass of pilular consistence. Divide into 100 pills.—U. S. P.

These pills should be freshly prepared when wanted.

Each pill contains about 1 grain of ferrous carbonate.

These pills were recognized by the N. F., 1st edition, but the proportions were somewhat different; there was somewhat more potassium carbonate, somewhat less sugar, and no althea.

Sometimes so-called 3-grain Blaud's pills (*Pilulæ Blaudii minores*) are prescribed or demanded. These may be prepared by using the quantities given in the above formula but dividing the mass into 168 pills.

To obtain pills of ferrous carbonate, the mass of iron carbonate or Vallet's mass may be used if desired, although exactly the same composition is not obtained.

The commercial Bland's pills, regular size or 5-grain, are always stated to be made with 2½ grains each of ferrous sulfate and potassium carbonate. The U. S. P. pill is made with 2½ grains of ferrous sulfate and just sufficient potassium carbonate to convert this into ferrous carbonate, so that the latter is preferable. Similarly the commercial 3-grain pill is stated to be made with 1½ grains each of ferrous sulfate and potassium carbonate, but the U. S. P. mixture made into 168, instead of 100, pills, should be preferred.

II. The *Pilula Ferri* or Iron Pill of the Brit. Pharm. is prepared as follows:

Ferrous sulfate, pure, dried..	gr. 150
Sodium carbonate, pure, dried	gr. 95
Acacia, powder	gr. 50
Tragacanth, powder.....	gr. 15
Simple syrup	gr. 150
Glycerin	gr. 10
Distilled water ..	gr. 20 or sufficient

To the syrup, glycerin and water, previously mixed, add the ferrous sulfate, mix, quickly add the sodium carbonate, mix thoroughly, set aside for 15 min-

utes, or until the reaction is complete, add the two gums, and incorporate thoroughly.

Dose, 5 to 15 grains.

If divided into 5-grain pills, each pill will contain about 1 grain of ferrous carbonate.

III.

Ferrous sulfate, pure, crystal gr. 250
Potassium carbonate, pure . . . gr. 150
Sugar, powder gr. 50
Tragacanth, powder gr. 17
Glycerin, distilled water, each . m. 11

Reduce the ferrous sulfate to fine powder, add the sugar and tragacanth, and mix intimately. Powder the carbonate finely in another mortar, and thoroughly incorporate the glycerin and water. Transfer this mixture to the mortar containing the iron, beat the whole thoroughly until the mass becomes green and assumes a soft pilular consistence, and divide into 100 pills.—Brit. Form. (2nd ed.).

IV.

Ferrous sulfate, dried gr. 135
Potassium carbonate, finely powdered gr. 105
Sugar, powder gr. 45
Marshmallow root, powder . . gr. 20
Magnesia, calcined gr. 10
Glycerin . . . sufficient or about gr 60

Mix the solids intimately, add enough glycerin to make a suitable pill mass and divide into pills weighing 4 grains (0.25 g.); dust with lycopodium.—Germ. Pharm.

V. The following is said to be the original formula of Blaud:

Ferrous sulfate, pure dried . . gr. 384
Potassium carbonate, pure, dried gr. 384
Acacia gr. 64
Simple syrup gr. 192
Water gr. 384

Dissolve the acacia in the water, in a porcelain capsule, on a water bath, add the syrup and ferrous sulfate, stir for some moments to make the mixture homogeneous, add the potassium carbonate, constantly stirring with an iron spatula, and continue stirring until the

mass has acquired a pilular consistence rather more hard than soft. Withdraw from the source of heat and divide the mass into 100 pills, which must be dried in the stove, and then silvered. Put into bottles and cork well.

Each pill weighs about 6 grains.

Pills of Iron, Compound. (Griffith's Pills.)

I.

Each pill should contain

Myrrh gr. 1½
Sodium carbonate, crystal . . . gr. ¾
Ferrous sulfate gr. ¾
Simple syrup sufficient

—N. F. and U. S. P. 1880.

II. Eclectic Compound Pills of Iron (or Emmenagogue Pills) are as follows:

Each pill should contain

Mass of iron carbonate gr. 2
Gum turpentine gr. 1
Resin of podophyllum gr. ½

Pills of Iron Ferrocyanid, Compound.

Each pill should contain

Iron ferrocyanid,
Quinine sulfate,
Extract of black cohosh, each . . gr. 1
—Eclectic.

These pills are tonic, alterative and antiperiodic and are used in intermittent fever, chorea, epilepsy, etc.

Pills of Iron (Ferrous) Iodid. (Blancard's Pills.)

Reduced iron gr. 60
Iodin gr. 75
Licorice root, No. 60 powd. . . gr. 60
Sugar, fine powder gr. 60
Ext. of licorice, fine powder . gr. 15
Acacia, fine powder gr. 15
Tolu balsam gr. 150
Stronger ether fl.dr. 4
Water sufficient

To the reduced iron, contained in a small mortar, add 1½ fluidrams of water, and then, gradually, the iodine, constantly stirring until the liquid ceases to have a reddish tint. Then add the remaining powders, previously well mixed together, and mix the whole thoroughly. Transfer the mass to a porcelain capsule, and evaporate the excess moisture on a water bath, with constant stirring, until the mass has acquired a pilu-

lar consistence. Then divide into 100 pills.

Dissolve the balsam in the stronger ether, shake the pills with a sufficient quantity of this solution until they are uniformly coated, and put them on a plate to dry, occasionally rolling them about until the drying is completed.

Keep the pills in a well-stoppered bottle.—U. S. P.

These are practically the same as Blancard's pills.

Each pill contains about 1 grain of ferrous iodid with an excess of iron.

Pills, Jalap.

Jalap soapparts 3

Jalap, powderpart 1

Make into 1½-grain pills.—Germ. Pharm.

Pills, Janeway's.

See Pills of Aloes and Podophyllum, Compound.

Pills, Laxative.

Thomsonian (from the *Materia Medica*):

Poplar or peach extract.....oz. 1

Rhubarboz. ½

Castile soapoz. ½

Bitter rootoz. ½

Ox-gall, driedoz. ½

Mix well, and add a small amount of capsicum. Make a mass and divide into pills (number not stated).

Pill, Laxative, Compound.

Each pill should contain

Aloingr. 1/5

Strychnine (alkaloid)gr. 1/120

Ext. belladonna leaves.....gr. 1/8

Ipecacgr. 1/16

Licorice rootgr. 7/10

Simple syrupsufficient

—U. S. P.

This formula is very similar to that of a number of proprietary pills, but the latter usually contain 1/60 grain of strychnine.

Pills, Laxative Post Partum, Barker's. (Laxative Pills after Confinement.)

Each pill should contain

Comp. ext. of colocynth....gr. 1 2/3

Purified aloesgr. 5/6

Extract of nux vomica.....gr. 5/12

Resin of podophyllum.....gr. 1/12

Ipecacgr. 1/12

Extract of henbane.....gr. 1 1/4

This is the formula generally employed by Dr. Fordyce Barker, except where special circumstances render modifications necessary. The formula usually quoted in manufacturers' lists and some formularies is not correct.—N. F.

Pills of Leptandra, Compound. (Compound Pills of Culver's Root.)

Each pill should contain

Extract of leptandra.....gr. 1

Resin of podophyllum.....gr. ½

Extract of rhubarb.....sufficient

Some prefer to make the mass with extract of dandelion instead of extract of rhubarb.—Eclectic.

This is a cholagogue, useful in liver affections, obstinate constipation, etc.

Pills, Lobelia, Compound.

Lobelia seed, fine powder.....oz. 4

Capsicum, fine powder.....oz. 4

Acacia, fine powder.....oz. 1

Water, enough to form a mass.

Divide into pills (number not stated).

—Thomsonian (from *Comfort's Practice*).

Pills, Mixed Treatment.

Each pill should contain

Red mercuric iodid.....gr. 1/20

Potassium iodidgr. 5

Pills, Metallic. (Bitter Metallic Pills —*Pilulæ Metallorum*.)

Each pill should contain

Reduced irongr. 1

Quinine sulfategr. 1

Strychnine (alkaloid)gr. 1/20

Arsenous acidgr. 1/20

—N. F.

These are similar to Aitken's Tonic Pills (see Pills, Tonic, Aitken's).

Pills of Myrrh.

This formula has been credited to Thomsonian practice:

Myrrhtablespoonful 1

Acaciateaspoonful 1

Sugarteaspoonful 1

Make into pills.

Pills, Neuralgia.

See Pills, Antineuralgic.

Pills No. 3.

These are from hydro-alcoholic extract of bayberry root bark.—Thomsonian (from Comfort's Practice).

In some formularies the formula given is equal parts of capsicum and extract of bayberry. Another name given to the latter is anti-canker pills. See Pills, Anti-Canker.

Pills, Opium.

Each pill should contain

Opium, powder	gr. 1
Soap, castile	3/10
Water	sufficient
—U. S. P.	

The corresponding preparation of the Brit. Pharm. is called compound pill of soap which is prepared from 1 av.ounce each of powdered opium and syrup of glucose and 3 of powdered castile soap. Dose, 2 to 4 grains.

Pills of Opium and Camphor.

Each pill should contain

Opium, powder	gr. 1
Camphor	gr. 2
—N. F.	

Pills of Opium and Lead. (Pills of Lead and Opium.)

Each pill should contain

Opium, powder	gr. 1
Lead acetate	gr. 1
—N. F.	

The Pill of Lead and Opium, Brit. Pharm., is made from 36 grains of lead acetate, 6 grains of powdered opium, and 4 grains or sufficient of syrup of glucose. Dose, 2 to 4 grains.

Pills, Phosphorus.

I.

Phosphorus	gr. 1
Althea, No. 60 powder.....	gr. 90
Acacia, fine powder.....	gr. 45
Tolu balsam	gr. 150
Stronger ether	fl.dr. 4
Chloroform, glycerin, water, each	sufficient

Dissolve the phosphorus in a test-tube in 80 minims of chloroform, with the aid of a very gentle heat, replacing from time to time any of the chloroform which may be lost by evaporation. Mix the althea and acacia in a mortar, next

add the solution of phosphorus, then immediately afterwards a sufficient quantity (about 1 fluidram) of a mixture of 2 volumes of glycerin and 1 of water, and quickly form a mass, to be divided into 100 pills.

Dissolve the tolu balsam in the stronger ether, shake the pills with a sufficient quantity of this solution until they are uniformly coated, and put them on a plate to dry, occasionally rolling them about until the drying is completed.

Keep the pills in a well-stoppered bottle.—U. S. P.

II.

Phosphorus	gr. 10
White wax	gr. 125
Lard	gr. 125
Kaolin	gr. 115
Carbon disulfid.....	m. 33 or sufficient

Place the wax and lard, previously melted, in a slightly warmed mortar, and stir until the mixture has the consistence of cream. Dissolve the phosphorus in the carbon disulfid and carefully mix the solution with the melted fats, add the kaolin, and mix well together.

Keep the mixture immersed in cold water in a bottle from which the light is excluded (amber bottle, for example). —Brit. Pharm.

When dispensed, every 3 grains of the mass is to be mixed with 1 grain of powdered acacia, and the resulting pills should be varnished.

Phosphorus Pill, including the acacia, contains 2 per cent. of phosphorus, hence is nearly double the strength of the Phosphorus Pill of the Brit. Pharm. 1885.

Dose, 1 to 2 grains.

Pills of Podophyllin, Compound.

Each pill should contain

Podophyllin	gr. 1/2
Scammony	gr. 1/2
Gamboge	gr. 1/2
Castile soap	gr. 1/4
—Eclectic.	

These are used for their cathartic effect, one or two pills being taken every

night or several times a week, as may be required.

Owing to the difficulty of obtaining pure scammony, extract of apocynum or of rhubarb, or irisin, is sometimes substituted for it by the Eclectics.

Pills of Podophyllum, Belladonna and Capsicum. (Squibb's Podophyllum or Laxative Pills.)

Each pill should contain

Resin of podophyllum.....gr. $\frac{1}{4}$
 Extract of belladonna leaves...gr. $\frac{1}{8}$
 Capsicum, moderately fine
 powdergr. $\frac{1}{2}$
 Sugar of milk, fine powder.....gr. 1
 Acacia, fine powder.....gr. $\frac{1}{4}$
 Glycerin, simple syrup,
 eachsufficient
 —U. S. P.

Pills of Poke, Compound.

Extract of poke leaves.....gr. 30
 Extract of stillingia.....gr. 15
 Ext. of stramonium leaves...gr. 2
 Make 16 pills.—Eclectic.

Pills, Quadruplex. (Quatuor Pills—Compound Pills of Iron and Quinine.)

Each pill should contain

Sulfate of iron, dried.....gr. 1
 Quinine sulfategr. 1
 Purified aloesgr. 1
 Extract of nux vomica.....gr. $\frac{1}{4}$
 Extract of gentian.....sufficient
 —N. F.

Pills of Quinine Sulfate.

I.
 Quinine sulfategr. 60
 Aromatic sulphuric acid...drops 45
 Make into 60 pills.—Eclectic.

II.
 Quinine sulfategr. 30
 Tartaric acid, powder.....gr. 1
 Glyceringr. 4
 Tragacanth, powdergr. 1
 Triturate the quinine sulfate with the acid, add this to the tragacanth and glycerin which have previously been mixed, and make a mass.—Brit. Pharm.

Dose, 2 to 8 grains.

Pills of Quinine, Compound.

Quinine sulfategr. 60
 Extract of dogwood.....gr. 60
 Tartaric acidgr. 60
 Extract of black cohosh...sufficient
 Divide into 4-gr. pills.—Eclectic.

The above is the formula as it is given.

Pills, Rhubarb.

Each pill should contain

Rhubarb, No. 60 powder.....gr. 3
 Soap, castile, fine powder....gr. 1
 Watersufficient
 —N. F. Appendix and U. S. P. 1890.

Pills, Rhubarb, Compound.

Each pill should contain

Rhubarbgr. 2
 Aloes, purifiedgr. 1 $\frac{1}{2}$
 Myrrhgr. 1
 Oil of peppermint.....m. 1/12

Mix the oil with the powders and make mass with water.—U. S. P.

Compound Rhubarb Pill, Brit. Pharm., is made from 2 av.ounces of rhubarb, $1\frac{1}{2}$ of socotrine aloes, 1 each of myrrh and castile soap, 1 fluidram of oil of peppermint, and $1\frac{3}{4}$ av.ounces or sufficient of syrup of glucose.

Dose, 4 to 8 grains.

Pills, Rhubarb, Wuerzburger. (Kneipp's Pills.)

Each is said to be composed of

Rhubarbgr. 1
 Extract of aloes.....gr. 1
 Extract of rhubarb.....gr. $\frac{1}{4}$
 Soapgr. $\frac{1}{4}$
 Juniper berrygr. $\frac{3}{40}$
 Fenugreekgr. $\frac{3}{40}$
 Dwarf eldergr. $\frac{3}{40}$
 Fennelgr. $\frac{3}{40}$

Pill, Scammony, Compound.

Resin of scammony.....av.oz. 1
 Resin of jalap.....av.oz. 1
 Curd soap, powder.....av.oz. 1
 Tincture of ginger.....fl.oz. 3

Add the tincture to the soap and resins, dissolve by the aid of a gentle heat, and evaporate on a water bath to suitable consistency.—Brit. Pharm.

Dose, 4 to 8 grains.

Pills, Scot's.

See Pills, Anderson's Scot's.

Pills of Soap, Compound. (Diuretic Pills.)

Oil of spearmint.....fl.dr. 1
 Oil of juniper berries.....fl.dr. 1
 Oil of sassafras.....fl.dr. 1
 Castile soapgr. 90

Beat the soap in a mortar, gradually adding the oils, thoroughly incorporating

after each addition, and, when all is added, divide into 18 pills.—Eclectic.

These are stimulant and diuretic, useful in gravel and chronic urinary affections.

For the Compound Pill of Soap of the Brit. Pharm., see Pill, Opium.

Pill, Squill, Compound.

Squill, powderav.oz. 1 $\frac{1}{4}$
 Ginger, powderav.oz. 1
 Gum ammoniac, powder...av.oz. 1
 Castile soap, powder.....av.oz. 1
 Syrup of glucose.....

..... av.oz. 1 or sufficient

Dose, 4 to 8 gr.—Brit. Pharm.

Pills, Sumbul, Goodell's.

Each pill should contain

Extract of sumbul.....gr. 1
 Ferrous sulfate, dried.....gr. 1
 Asafetidagr. 1 $\frac{1}{2}$
 Arsenous acidgr. 1 $\frac{1}{40}$

Pills, Tonic, Aitken's.

Each pill should contain

Reduced irongr. 2 $\frac{2}{3}$
 Quinine sulfategr. 1
 Strychnine (alkaloid)gr. 1 $\frac{1}{50}$
 Arsenous acidgr. 1 $\frac{1}{50}$

—N. F.

These are similar to Pills, Metallic, which see.

Pills, Townsend's.

It is said that pills of this name should each be made from

Mass of mercury.....gr. 1 1 $\frac{1}{4}$
 Gambogegr. 1 1 $\frac{1}{4}$
 Extract of aloes.....gr. 1 1 $\frac{1}{4}$
 Gingergr. 1 1 $\frac{1}{4}$
 Oil of peppermint.....drop 3 $\frac{1}{16}$

Pills, Triplex. (Pilulæ Triplices—Compound Pills of Scammony.)

I. Regular formula:

Each pill should contain

Purified aloesgr. 2
 Mass of mercury.....gr. 1
 Resin of podophyllum.....gr. 1 $\frac{1}{4}$

—N. F.

When Pilula Triplex, under this name or some equivalent, is prescribed without further specification, it is recommended that the above preparation be dispensed. A formula devised by Dr. John W. Francis is also in use:

II. Francis' Triplex Pill:

Each pill should contain

Purified aloesgr. 5 $\frac{1}{6}$
 Scammonygr. 5 $\frac{1}{6}$
 Mass of mercury.....gr. 5 $\frac{1}{6}$
 Croton oilm. 1 $\frac{1}{20}$
 Oil of caraway.....m. 1 $\frac{1}{4}$
 Tincture of aloes and myrrh
 (U. S. P.).....sufficient
 —N. F.

The following is said to be the original formula of Dr. J. W. Francis:

Scammony ("gum"), powd.....gr. 120
 Aloes, socotrine, powder....gr. 120
 Mass of mercury.....gr. 120
 Croton oilm. 5
 Oil of caraway.....m. 22
 Tincture of aloes and myrrh.m. 30
 Make 100 pills.

The pill furnished by manufacturing houses corresponds to the latter formula, not to that of the N. F.

Pills of Valerian, Compound.

Extract of scullcap.....gr. 60
 Extract of Roman chamomile..gr. 60
 Extract of boneset.....gr. 30
 Quinine sulfategr. 30
 Capsicumgr. 10
 Oil of valerian.....gr. 15

Make into 45 pills.—Eclectic.

These pills are tonic and nerve, the dose being one every 2 or 3 hours.

Pills of Viburnum, Compound. (Compound Pills of High Cranberry or Cramp Bark.)

Each pill should contain

Extract of cramp bark.....gr. 3 $\frac{1}{4}$
 Extract of blue cohosh.....gr. 3 $\frac{1}{4}$
 Extract of mitchella.....gr. 1 $\frac{1}{2}$

Useful in uterine diseases, the dose being 1 or 2 pills 3 times a day.—Eclectic.

Pills, Warburg.

See Pills, Antiperiodic.

Pills of Wild Indigo, Compound. (Compound Pills of Baptisia.)

Each pill should contain

Extract of leptandra.....gr. 1 $\frac{1}{4}$
 Resin of podophyllum.....gr. 1 $\frac{1}{2}$
 Sanguinaringr. 1 $\frac{1}{16}$
 Extract of wild indigo, enough to form a mass.

This is a cholagogue, laxative and antiseptic, useful in typhoid fever.—Eclectic.

Pills of Zinc Acetate, Rademacher's.

Each pill should contain

Zinc acetategr. 3

Extract of licoricesufficient

—H.

Plasters. (Emplastra.)

These are solid compounds, of fatty character, intended for external use. They are harder than cerates, are to be spread by heat on cloth, leather, etc., and in this form are applied to the body to which they adhere.

The spread plasters of the market consist of plasters of the above character spread on suitable material or they have a caoutchouc (india-rubber) instead of a fatty vehicle. The U. S. P. recognizes one spread plaster, viz., capsicum.

Plaster, Aconite.

Fluid extract of aconite....fl.oz. 4

Lead plasterav.oz. 3½

Evaporate the extract to soft extract consistency, add the plaster, previously melted, and stir constantly until thoroughly incorporated and the whole is nearly cold.—Eclectic.

Plaster, Adhesive.

Rubber, cut in small pieces.av.oz. ¼

Petrolatum, yellowav.oz. ¼

Lead plasterav.oz. 12

Melt the rubber at a temperature not exceeding 150 deg. C., add the petrolatum and continue the heat until the rubber is dissolved. Add the lead plaster to the hot mixture, continue the heat until it becomes liquid, then strain, allow it to cool and stir until it stiffens
—U. S. P.

This was introduced into the present U. S. P. to replace the resin plaster of the U. S. P. 1890 in making other plasters, such as belladonna, opium and capsicum plasters.—U. S. P.

Plaster, Ammoniac.

Gum ammoniacav.oz. 5

Diluted acetic acid.....fl.oz. 7

Digest the ammoniac with the diluted acetic acid, in a suitable vessel, avoiding contact with metals, until it is entirely emulsionized; then strain and

evaporate the strained liquid, by means of a water bath, stirring constantly, until a small portion, taken from the vessel, hardens on cooling.—N. F. Appendix and U. S. P. 1880.

Plaster, Ammoniac, with Mercury. (Ammoniac and Mercury Plaster.)

I.

Gum ammoniacav.oz. 3

Mercuryav.oz. ¾

Oleate of mercury.....gr. 15

Diluted acetic acid.....fl.oz. 4

Lead plaster, to make

..... av.oz. 4. gr. 75

Digest the ammoniac with the acid, in a closed vessel, avoiding contact with metals, until the gum is entirely emulsified, then strain, and evaporate the strained liquid by means of a water bath, stirring constantly, until a small portion taken from the vessel hardens on cooling. Triturate the oleate with the mercury, gradually added, until globules of metal cease to be visible. Next add gradually the ammoniac while yet hot, then enough lead plaster, previously melted on a water bath, to make 4 av.ounces, 75 gr., and mix the whole thoroughly.—N. F. Appendix and U. S. P. 1890.

II.

Ammoniac plaster...part by weight 1

Plaster of mercury, eclectic

.....parts by weight 2

—Eclectic.

III.

Ammoniacav.oz. 3

Mercury (metal)av.oz. ¾

Olive oilgr. 14

Sulfurgr. 2

Heat the oil, add the sulfur to it gradually, stirring until they are uniformly blended; with this mixture triturate the mercury until metallic globules are no longer visible. To this add the ammoniac, previously purified by boiling with successive portions of water, passing the resulting emulsions through a hair sieve, rubbing the residues on the latter; after mixing, evaporate the emulsions to suitable consistence.—Brit. Pharm.

Plaster, Arnica.

I.

Extract of arnica root.....av.oz. 1

Resin plaster.....av.oz. 2

Add the extract to the plaster, previously melted on a water bath, and mix them thoroughly.—N. F. Appendix and U. S. P. 1890.

II.

Fluid ext. of arnica flowers.fl.oz. 16

Resin plaster.....av.oz. 4

Burgundy pitch.....av.oz. 1

Evaporate the fluid extract on a water bath to a soft extract weighing about 2 av.ounces, then add the resin plaster and pitch previously melted.—Eclectic.

Plaster, Aromatic. (Spice Plaster.)

Clove.....av.oz. 1

Cinnamon, saigon.....av.oz. 1

Ginger.....av.oz. 1

Capsicum.....av.oz. $\frac{1}{2}$ Camphor.....av.oz. $\frac{1}{2}$ Cottonseed oil.....av.oz. $3\frac{1}{2}$ Lead plaster.....av.oz. $2\frac{1}{2}$

Melt together the plaster and oil, with the aid of heat. Cool the mixture and, while it is still soft, thoroughly incorporate with it the aromatic ingredients, previously reduced to a very fine powder.—N. F.

Plaster, Asafetida.Asafetida.....av.oz. $1\frac{3}{4}$ Lead plaster.....av.oz. $1\frac{3}{4}$ Galbanum.....av.oz. $\frac{3}{4}$ Yellow wax.....av.oz. $\frac{3}{4}$

Alcohol.....fl.oz. 6

Digest the asafetida and galbanum, both in coarse powder, with the alcohol on a water bath, separate the liquid portion, while hot, from the coarser impurities by straining, and evaporate it to the consistence of honey; then add the lead plaster and the wax, previously melted together, stir the mixture well, and evaporate to the proper consistence.—N. F. Appendix and U. S. P. 1880.

Plaster, Bayberry. (Green Salve—Emplastrum Myricæ.)

Gum turpentine,

Bayberry wax, each....equal parts

Melt together, strain, and stir until cool.—Eclectic.

In winter a small quantity of olive or cottonseed oil may be added.

Plaster, Belladonna.

Extract of belladonna leaves.parts 3

Adhesive plaster, U. S. P....parts 7

Melt the adhesive plaster on a water bath, add to it the extract of belladonna leaves, previously softened by the heat of a water bath, and continue the heat, stirring constantly until the mixture is perfectly homogeneous, then allow to cool.—U. S. P.

Belladonna plaster should contain not less than 0.38 to 0.42 per cent. of mydriatic alkaloids. It is customary for druggists to retail over their counters the spread belladonna plasters of the factories which are made with a rubber base. The U. S. P. requires that these also should assay not less than 0.38 nor more than 0.42 per cent. of mydriatic alkaloids.

The belladonna plaster of the U. S. P. 1890 was made with resin and soap plasters as a base.

The plaster of the Brit. Pharm. is made by evaporating $6\frac{1}{4}$ fluidounces of liquid (fluid) extract of belladonna, Brit. Pharm., on a water bath until it weighs $1\frac{1}{2}$ av.ounces, then incorporating $7\frac{1}{2}$ av.ounces of resin plaster, previously melted.

This latter plaster contains 0.5 per cent. of the alkaloids of belladonna root.

The Brit. Form. recognizes a "green belladonna plaster" made by mixing alcoholic extract of belladonna leaf, such a quantity as contains 11 grains of alkaloid, with enough resin plaster to make 10 av.ounces. This is half the alkaloidal strength of the belladonna plaster of the Brit. Pharm.

Plaster of Belladonna, Compound.

Resin plaster.....av.oz. 5

Extract of belladonna root.av.oz. 1

Extract of conium leaves..av.oz. $1\frac{1}{2}$

Iodin.....gr. 40

Place the plaster in a porcelain or wedgewood mortar and put this into hot water. When the plaster begins to melt

add the extract, and incorporate thoroughly. Then remove the mortar from the water, allow to become cool, add to its contents the iodine, previously reduced to powder, and continue the trituration until the whole is well mixed.

The inspissated juices are preferred to the above extracts for this preparation. The extracts as usually made in England from the fresh drugs would answer the requirements.—Eclectic.

Plaster, Burgundy Pitch.

See Plaster, Pitch, Burgundy.

Plaster, Canada Pitch. (Hemlock Pitch Plaster—Hemlock Plaster—*Emplastrum Picis Canadensis*.)

Canada or hemlock pitch (so-called hemlock gum)...av.oz. 4
Yellow waxgr. 175

Melt them together, strain the mixture, and stir constantly until it thickens on cooling.—N. F. Appendix and U. S. P. 1880.

Plaster, Cancer.

Thomsonian (from the Guide):

Extract red clover heads by boiling with water, expressing, and evaporating to a thin extract.

Plaster, Cantharides. (*Emplastrum Cantharides*, *Epispasticum* or *Lyttæ*.)

I.

Cantharides, powderav.oz. $3\frac{1}{2}$
Yellow waxav.oz. 2
Lardav.oz. 2
Resinav.oz. 2
Soap plasterav.oz. $\frac{1}{2}$

Melt the resin, add the plaster, and afterwards the wax and lard, sprinkle the cantharides into the melted mixture, and stir the latter continuously while cooling.—Brit. Pharm.

II. The preparation of the Germ. Pharm. called "ordinary cantharides plaster" is made as follows:

Cantharides, moderately fine.av.oz. 2
Olive oilav.oz. 1
Soft turpentineav.oz. 1
Yellow waxav.oz. 4

Heat the cantharides with the oil on a water bath for 2 hours, add the wax and turpentine, allow all to melt to-

gether, remove the dish from the source of heat, and stir until cold.

The Germ. Pharm. also recognizes a perpetual and a veterinary cantharides plaster.

Plaster, Cantharides, Perpetual. (*Emplastrum Cantharides Perpetuum* — *Immerwährendes Spanischfliegen Pflaster*.)

Cantharides, moderately fine.av.oz. 1
Gum euphorbium, moderately fineav.oz. $\frac{1}{4}$
Mutton suetav.oz. 1
Soft turpentineav.oz. $1\frac{3}{4}$
Yellow waxav.oz. $2\frac{1}{2}$
Resinav.oz. $3\frac{1}{2}$

Melt the resin with the turpentine, add the suet and wax, when all is melted, incorporate the two powders, and stir until cold.—Germ. Pharm.

Plaster, Cantharides, Veterinary.

Cantharides, coarse powder.av.oz. 3
Gum euphorbium, moderately fine powder.....av.oz. 1
Resinav.oz. 6
Soft turpentineav.oz. 6

Melt the resin, add the turpentine, incorporate the powders, and stir till cold.—Germ. Pharm.

Plaster, Capsicum.

Oleoresin of capsicum.....gr. $2\frac{1}{2}$
Adhesive plaster, spread on fabricsufficient

Over a piece of spread adhesive plaster 6 inches square, apply the oleoresin, painting it with a suitable brush over the surface of the plaster, but leaving a margin around the sides of the latter.

—U. S. P.

Plaster, Capsicum, Compound. (Common Strengthening Plaster—*Sear-Cloth Plaster*.)

Resinav.oz. 4
Yellow waxav.oz. 1
Tincture of capsicum,
U. S. P.....fl.oz. 5
Camphor, powderav.oz. $\frac{1}{2}$
Oil of sassafras.....m. 45

Melt the resin and wax, add the tincture, and keep the whole at a gentle heat, stirring constantly, until the alcohol has evaporated; then remove from the fire, and when nearly cold add the camphor and oil.—Eclectic.

It would be much more convenient to substitute 2 fluidrams of fluid extract of capsicum for the tincture.

Plaster, Court.

See Plaster, Isinglass.

Plaster, Galbanum. (Compound Galbanum Plaster, U. S. P. 1870—Compound Lead or Drachylon Plaster.)

Galbanum	av.oz.	1
Gum turpentine	gr.	55
Burgundy pitch	gr.	165
Lead plaster	av.oz.	4¾

To the galbanum and turpentine, previously melted together and strained, add, first, the pitch, then plaster, melted over a gentle fire, and mix the whole thoroughly.—N. F. Appendix and U. S. P. 1880.

Galbanum Plaster, Brit. Pharm. 1885 (not in 1898 edition), is prepared from 1 av.ounce each of galbanum, ammoniac and yellow wax and 8 av.ounces of lead plaster. Melt the galbanum and ammoniac together, strain, and add the wax and plaster, previously melted together.

The latter is more similar than the former to compound lead plaster, Germ. Pharm. See Plaster, Lead, Compound.

Plaster, Galbanum, Red. (Oxycroceum Plaster — Ochsenkreuz Pfaster.)

Resin	av.oz.	3
Yellow wax	av.oz.	1½
Ammoniac	av.oz.	¾
Galbanum	av.oz.	¾
Venice turpentine	av.oz.	¾
Olibanum, fine powder	gr.	395
Mastic, fine powder	gr.	395
Spanish saffron, fine powder, previously moistened with alcohol	gr.	198

Melt together the resin and wax, also the galbanum and ammoniac with the Venice turpentine at a gentle heat. When the former has partially cooled, add the second mixture, and then incorporate the remaining ingredients.—Austr. Pharm.

The ammoniac and galbanum should have previously been purified by repeated boiling with water and evaporating the emulsion.

Previous editions of the same work directed powdered ammoniac and galbanum instead of the whole gums purified.

A cheap substitute is the following:

Burgundy pitch	av.oz.	5¼
Yellow wax	av.oz.	3¼
Soft turpentine	av.oz.	2½
Red saunders, fine powder	av.oz.	1¼
Beef suet	av.oz.	¼

Heat the saunders and turpentine in a closed vessel, on a water bath, for 1 hour, melt the other ingredients together, strain, add the saunders mixture, and stir until concremented.—D.

Plaster, Iron. (Strengthening Plaster.)

Iron (ferric) hydrate, freshly prepared and dried at a temperature not exceeding 80 deg. C.	av.oz.	¾	(gr. 330)
Olive oil	gr.	180	or fl.dr. 3¼
Burgundy pitch	gr.	510	
Lead plaster	av.oz.	6	

Melt the plaster and pitch by means of a water bath, add the oil, then add the hydrate, and stir constantly until the mixture thickens on cooling.—N. F. Appendix and U. S. P. 1890.

Plaster, Isinglass. (Court Plaster—Emplastrum Ichthyocollæ — Emplastrum Adhæsivum Anglicum.)

I. Isinglass, Russian	gr.	150
Alcohol	gr. 600	or fl.dr. 12½
Glycerin	gr.	15
Water,		
Tincture of benzoin, each	sufficient	

Dissolve the isinglass in enough hot water to make the solution weigh 4 av.ounces. Spread one-half of this, in successive layers, upon taffeta (stretched on a frame), by means of a brush, waiting after each application until the layer is dry. Mix the second half of the isinglass solution with the alcohol and glycerin, and apply it in the same manner. Then reverse the taffeta, coat it on the back with the tincture of benzoin, and allow it to become perfectly dry.

Cut the plaster in pieces of suitable length and preserve in well-closed vessels.—U. S. P. 1890.

The above directions are sufficient to cover a piece of taffeta 15 inches square.

II.

Isinglass, cut as fine as possibleav.oz. $\frac{1}{2}$
 Sugargr. 5
 Water, alcohol, tincture of benzoin, eachsufficient

Heat the isinglass with 2 fluidounces of water in a covered vessel on a water or steam bath until most of it is dissolved, strain, treat the undissolved residue again with the same amount of water, strain again, mix the strained liquids, evaporate to a weight of 3 av. ounces, and add the sugar, dissolving the latter by agitation. When the liquid has become tolerably cool, apply it by means of a soft, broad brush, upon silk taffeta stretched on a frame, in separate coats, the first three being applied in a cool room, the subsequent ones in a moderately warm room. Each coat must be dried before the next is applied. The back of the taffeta is to be coated with tincture of benzoin diluted with an equal volume of alcohol.—Germ. Form.

The $\frac{1}{2}$ av.ounce of isinglass should coat about 480 square inches of cloth.

The U. S. P. formula has the advantage of using glycerin, which prevents the plaster from cracking.

Plaster, Lead. (Diachylon Plaster—Litharge Plaster — Emplastrum Plumbi or Lithargyri.)

I.

Soap, dried and in coarse powderav.oz. 10
 Lead acetateav.oz. 6
 Distilled watersufficient

Dissolve the soap in 35 fluidounces of hot water and strain the solution, also dissolve the lead acetate in 25 fluidounces of hot water, and at once filter the lead solution into the warm soap solution, stirring constantly. When the precipitated lead oleate has subsided, decant the liquid, and wash the precipitate thoroughly with hot water. Transfer the mass to a warm slab and knead it thoroughly to free it from wa-

ter. Finally roll the plaster into the form of a cylinder and wrap in paraffined paper.—U. S. P.

The soap for this preparation should be a pure olive oil soap such as a castile soap of known purity. This should be cut into rather small cakes, dried by exposure to the air, then grated and again dried by exposure to the air. Or in lieu of drying in this manner, the amount of moisture in the soap may be determined by examination and then proportionately more of the soap used in making the preparation.

The lead acetate should be perfectly pure, not an ordinary commercial article. Only distilled water should be used.

This process of making lead oleate by precipitation is intended to replace the boiling process of the U. S. P. 1890, but inasmuch as the latter is an excellent process, it is also given here.

II.

Lead oxidav.oz. 8
 Olive oilav.oz. 15
 Watersufficient

Triturate the oxid, previously passed through a No. 80 sieve, with about one-half of the oil until well mixed, and add to the remainder of the oil contained in a bright copper boiler of a capacity equal to at least 4 times the bulk of the ingredients. Then add $2\frac{1}{2}$ fluidounces of boiling water and boil the whole together over a fire, stirring constantly with a wooden spatula, scraping the spatula frequently along the sides and bottom of the boiler, until a small portion taken out and dropped into cold water is found to be pliable and tenacious. From time to time add a little water to replace that lost by evaporation. When the contents of the boiler has acquired a whitish color and is perfectly homogeneous, transfer it to a vessel containing warm water, and as soon as the mass has cooled sufficiently, knead it well with water so as to remove the glycerin which has been formed during the above reaction, re-

newing the water from time to time as may be necessary to remove all of the glycerin. Dry the mass and divide into rolls of suitable size.—U. S. P. 1890.

If the heat be continued too long, the plaster will become discolored; if not continued long enough, there will be uncombined oxid.

III.

Lead oxid	av.oz. 8
Olive oil	av.oz. 16
Distilled water.....	
.....	fl.oz. 8 or sufficient

Boil all the ingredients together gently by the aid of a steam bath; keep simmering for 4 or 5 hours, stirring constantly until the product acquires the proper consistence for plaster; add more water during the process if necessary.—Brit. Pharm.

IV.

Lead oxid, finely powdered.....	av.oz. 5
Olive oil, common.....	av.oz. 5
Lard	av.oz. 5
Water	fl.oz. 1

Triturate the oxid with the water to a smooth paste, add the oil and lard, and boil over a moderate fire, occasionally adding a small amount of water and stirring continuously until the plaster is formed and has the requisite hardness.

The plaster while still warm is to be freed from glycerin by kneading with repeated portions of warm water, and then dissipating the water, as much as possible, on a water bath.—Germ. Pharm.

Plaster, Lead, Compound. (Compound Diachylon or Litharge Plaster—Gummi Plaster.

Lead plaster	av.oz. 6
Yellow wax	av.oz. $\frac{3}{4}$
Ammoniac	av.oz. $\frac{1}{2}$
Galbanum	av.oz. $\frac{1}{2}$
Soft turpentine	av.oz. $\frac{1}{2}$

Melt the plaster and wax together at a gentle heat and strain; also melt the ammoniac and galbanum with the turpentine, strain, and add this to the partially cooled plaster and wax mixture.

—Germ. Pharm.

This is somewhat akin to galbanum plaster. See Plaster, Galbanum.

Plaster, Lead Iodid.

Lead iodid, fine powder....	av.oz. $\frac{1}{2}$
Resin	av.oz. $\frac{1}{2}$
Lead plaster	av.oz. 4

Melt the resin and plaster together at as low a temperature as possible, and incorporate the lead iodid.—Brit. Pharm.

Plaster, Lead, White. (Emplastrum Cerussæ—Emplastrum Album Coctum—Plaster of Lead Carbonate.

Lead carbonate, fine powder.....	av.oz. $\frac{3}{2}$
Olive oil	av.oz. 1
Lead plaster	av.oz. 6
Water	sufficient

Triturate the lead carbonate to a perfectly smooth paste with the oil, add this mixture to the lead plaster previously melted on a water bath, continue the heat, occasionally adding a small amount of water, and stirring continuously, until a suitable plaster mass is formed.—Germ. Pharm.

Plaster, Logan's.

Lead oxid	av.oz. 2
Lead carbonate	av.oz. 2
Castile soap	av.oz. $1\frac{1}{2}$
Butter, fresh	av.oz. $\frac{1}{2}$
Olive oil	fl.oz. 5
Mastic, powder	gr. 15

Mix the soap, oil and butter, add the lead oxid, and boil the whole gently for an hour and a half or until it has acquired a pale-brown color, stirring constantly meanwhile; the heat may then be increased and the boiling continued till a portion of the melted plaster dropped on a smooth board is found not to adhere; then remove the vessel from the fire and add the mastic to the mixture.

Plaster, Lumbago. (Hexenschuss Plaster.)

Kneipp's:

Dispense burgundy pitch plaster.

Plaster, Menthol.

Menthol	av.oz. $1\frac{1}{2}$
Yellow wax	av.oz. 1
Resin	av.oz. $7\frac{1}{2}$

Melt the resin and wax together; when the mixture approaches the tem-

perature of 71 to 77 deg. C., stir in the menthol until dissolved—Brit. Pharm.

This contains 15 per cent. of menthol.

Plaster, Mercurial. (Emplastrum Hydrargyri.)

I.

Mercury (metal)av.oz. 1½
Oleate of mercury.....gr. 22
Wool fat, hydrous.....av.oz. ½
Lead plaster, to make.....av.oz. 5

Triturate the mercury with the oleate until the metal is thoroughly divided, then add the wool fat and continue the trituration until the globules of mercury are no longer visible. Add the previously been melted in a tared dish, and incorporate thoroughly, adding if necessary enough more lead plaster to make the product weigh 5 av.ounces.

—U. S. P.

II.

Mercuryav.oz. 1½
mixture to the lead plaster, which has
Olive oilgr. 28
Sulfurgr. 4
Lead plasterav.oz. 3

Heat the oil, add the sulfur to it gradually, stir until uniformly blended, with this mixture triturate the mercury until metallic globules are no longer visible, and incorporate the lead plaster which has previously been melted.

—Brit. Pharm.

III.

Mercuryav.oz. 3
Resinav.oz. 1
Olive oilfl.dr. 9
Lead plasterav.oz. 6

Melt the resin, add the oil, allow to cool, add the mercury, triturate until the latter is extinguished, then add the lead plaster previously liquefied.—Eclectic.

IV.

Mercuryav.oz. 1
Wool fat, anhydrous.....av.oz. ½
Yellow waxav.oz. ½
Lead plasterav.oz. 3

Triturate the mercury with the wool fat until well mixed, then incorporate with the previously melted and par-

tially cooled mixture of wax and plaster.—Germ. Pharm.

Plaster, Miraculous, Rademacher's.

Red leadav.oz. 4
Olive oilav.oz. 8
Amber, powdergr. 84
Camphor, powdergr. 56
Burnt alum, fine powder.....gr. 28
Watersufficient

Boil the lead and oil with some water, according to the method of making mother plaster, until a black plaster is formed, allow to cool somewhat, and incorporate the other ingredients.—H.

This may be made directly from camphorated mother plaster as follows:

Camphorated mother plasterav.oz. 4
Amber, powdergr. 28
Burnt alum, fine powder.....gr. 9
—H.

Plaster, Mother, Camphorated. (Mother Plaster—Camphorated Brown Plaster—Emplastrum Fuscum or Fuscum Camphoratum—Emplastrum Matris Camphoratum—Nuremburg or Universal Plaster.)

Red oxid of lead (red lead)av.oz. 3
Olive oilav.oz. 6
Yellow waxav.oz. 1½
Camphorgr. 45

Triturate the red oxid of lead with a portion of the oil in a capacious copper kettle to a smooth paste. Then add the remainder of the oil, excepting a small quantity required for trituration with the camphor, and boil the whole over a naked fire, under constant stirring, until gas bubbles rise, or until the red color of the mixture begins to turn brown. Then moderate the heat, but keep up the stirring until the mixture has acquired a dark-brown color, and from time to time allow some drops of it to fall into cold water to test its consistence. When this is satisfactory (i. e., can be kneaded between the fingers), remove the vessel from the fire, add the wax in small pieces, and finally the camphor, previously rubbed to a smooth paste with a little olive oil. Mix thoroughly, allow the mixture to become somewhat cool, and while it is still

warm, pour the plaster into paper molds previously coated with mucilage containing about 5 per cent. of glycerin, and dried.—N. F. and Germ. Pharm.

The olive oil intended to be used for this preparation is the common grade having a greenish color. In place of it, cottonseed oil may be used.

If desired, the camphor may be omitted; it often is. Sometimes $\frac{1}{2}$ to 1 av.ounce of black pitch is added to the above mixture. The Germ. Pharm. does not direct a copper vessel; but this is preferred.

Plaster Mulls.

See Mulls, Plaster and Salve.

Plaster, Opium. (Emplastrum Odon- talgicum or Cephalicum.)

Extract of opium.....	gr. 260
Adhesive plaster	av.oz. 9
Water	fl.dr. 6½

Rub the extract with the water until it is uniformly soft, also melt the plaster in a tared dish on a water bath, add the softened extract, and continue the heat with constant stirring until the product weighs 10 av.ounces. —U. S. P.

Opium plaster of the Brit. Pharm. is made from 1 av.ounce of opium in very fine powder, with 9 av.ounces of resin plaster.

Plaster, Pitch. (Emplastrum Picis.)

I. See Plaster, Pitch, Burgundy.

II.

Burgundy pitch	lb. 1
Venice turpentine	lb. 1
Capsicum, powder	oz. 1

Melt together and if too hard, remelt and add a small amount of sweet oil.—Thomsonian (from Comfort's Practice).

Plaster, Pitch, Burgundy.

I.

Burgundy pitch	av.oz. 4
Yellow wax	av.oz. ¾
Olive oil	av.oz. ¼

Melt the pitch and wax, incorporate the oil, and stir constantly until the mass thickens on cooling.—N. F. Appendix and U. S. P. 1890.

II. Pitch Plaster:

Burgundy pitch	av.oz. 4
Olibanum	av.oz. 2
Resin	gr. 300
Yellow wax	gr. 300
Olive oil	gr. 135
Distilled water	fl.dr. 2½

Add the oil and water to the olibanum, pitch, resin and wax, previously melted together, and evaporate with constant stirring to proper consistence.—Brit. Pharm.

Plaster, Pitch, Canada or Hemlock.

See Plaster, Canada Pitch.

Plaster, Pitch, Cantharidal. (Warm- ing Plaster.)

I.

Cerate of cantharides.....	gr. 140
Burgundy pitch, to make.....	av.oz. 4

Melt the cerate on a water bath containing boiling water, and continue the heat for 15 minutes; then strain it through a piece of muslin of close texture so that the cantharides will be retained on the muslin. To the strained cerate, add enough pitch to make the whole weigh 4 av.ounces, render the mixture homogeneous by stirring, remove the heat, and stir the mass until it thickens on cooling.

II. Emplastrum Calefaciens or Warm- ing Plaster:

Cantharides, coarse powder.....	av.oz. ½
Yellow wax	av.oz. ½
Resin	av.oz. ½
Soap plaster	av.oz. 4
Resin plaster	av.oz. 6½
Distilled water, boiling.....	fl.oz. 2½

Infuse the cantharides in the water for 6 hours, express strongly in muslin, evaporate the liquid on a water bath until reduced to one-third, add the other ingredients, melt on a water bath, and stir until well mixed.—Brit. Pharm.

A somewhat simpler formula than this, using the ingredients of the resin and soap plaster, is this:

Cantharides	av.oz. ½
Yellow wax	av.oz. ½
Castile soap	av.oz. 1
Resin	av.oz. 1¾
Lead plaster	av.oz. 8¾
Water	fl.oz. 2½

Prepare as before.

Plaster, Resin. (Emplastrum Adhæsivum—Adhesive or Sticking Plaster—Heft Pfaster.)

- I.
 Yellow waxav.oz. $\frac{3}{4}$
 Resin, fine powder.....av.oz. $1\frac{3}{4}$
 Lead plasterav.oz. 10

Melt the lead plaster and wax together at a gentle heat, add the resin, and when it is melted, mix the mass thoroughly.—N. F. Appendix and U. S. P. 1890.

The adhesive plaster of the U. S. P. 1890 is intended to replace the above. See Plaster, Adhesive.

II. The Brit. Pharm. directs $\frac{1}{2}$ av.ounce of castile soap, 1 of resin, and 8 of lead plaster. Melt each separately at a low temperature, and mix.

- III.
 Lead plasterav.oz. 4
 Paraffin waxav.oz. $\frac{1}{4}$
 Liquid paraffinav.oz. $\frac{1}{4}$
 Caoutchouc (rubber)av.oz. 1
 Dammarav.oz. 1
 Resinav.oz. $3\frac{1}{2}$
 Petroleum benzin
av.oz. $7\frac{1}{2}$ (fl.oz. 11)

Heat the lead plaster on a water bath for some time until thoroughly free from water, add the two paraffins, and, when melted, add a previously melted mixture of the dammar and resin, and then add the rubber dissolved in the benzin; finally heat the mixture cautiously on a water bath, stirring constantly meanwhile, until the benzin has been completely dissipated. — Germ. Pharm.

Plaster, Resin, Compound. (Adhesive and Strengthening Plaster.)

- White resinav.oz. 12
 Yellow waxav.oz. 1
 Burgundy pitchav.oz. 1
 Suetav.oz. 1
 Olive oilfl.dr. 1
 Oil of sassafrasfl.dr. 1
 Camphor, powdergr. 60
 West India rum.....fl.oz. 1

Melt the first four ingredients together, then add the other substances, incorporate thoroughly, pour the whole into cold water and work with the hands till cold, and form into rolls.

—Eclectic.

The pouring into and working in water is, however, an unnecessary procedure. The rum also serves no good purpose and may be omitted.

Another Eclectic formula, preferred by some, is the following:

- Resinav.oz. 12
 Yellow waxav.oz. 1
 Oil of hemlockfl.dr. 2
 Oil of sassafrasfl.dr. 2
 Oil of turpentine.....fl.dr. 1
 Olive oilfl.dr. 2
 Camphorgr. 55

Melt the resin and wax together, allow to cool, and while still liquid add the camphor dissolved in the oils.

Plaster, Soap. (Emplastrum Saponis or Saponatum.)

- Soap, castile, dried, coarse powderav.oz. 1
 Lead plasterav.oz. 9
 Watersufficient

Rub the soap with enough water to reduce it to a semi-liquid state, then mix it with the lead plaster, previously melted, and evaporate it to the proper consistence.—U. S. P. and Eclectic.

The soap should be an olive-oil soap, such as castile soap is supposed to be.

The Brit. Pharm. directs $\frac{1}{4}$ av.ounce of resin, $1\frac{1}{2}$ av.ounces of castile soap, and 9 of lead plaster.

The Germ. Pharm. directs 7 av.ounces of lead plaster and 1 of yellow wax to be melted together at a moderate temperature, allowed to cool partially, adding $\frac{1}{2}$ av.ounce of medicinal soap, powdered moderately fine, and 45 grains of camphor previously triturated with the same weight of olive oil, and stirred till cool.

Plaster, Strengthening.

- Burdock leaves,
 Mullein leaves, each....equal parts
 Water,
 Rosin,
 Turpentine, eachsufficient

Mix the fresh leaves, bruise in a mortar, boil thoroughly with sufficient water, strain and express, boil the liquid down to thin syrup, add 3 parts of rosin and 1 of turpentine and simmer till all the water has evaporated. Put

into cold water and knead with the hands.

If too hard, add more turpentine; if too soft, add more rosin.—Thomsonian (from the Guide and Materia Medica).

Another strengthening plaster by Thomson was made from 2 ounces of rosin, 1 teaspoonful of powdered capsicum and enough lard to give the proper consistence.

Plaster, Tar, Compound. (Irritating Plaster.)

Resinav.oz. 5
Pine tarav.oz. 4
Mandrake root, No. 60 powderav.oz. 1
Poke root, No. 60 powder...av.oz. 1
Bloodroot, No. 60 powder...av.oz. 1

Melt the resin and tar together, then stir in the mixed powders, and as the mass cools, mold it into rolls, or pour it into boxes.—N. F.

The above is a slightly modified Eclectic formula which is as follows:

Burgundy pitchav.oz. 3
Gum turpentineav.oz. 2
Pine tarav.oz. 6
Mandrake rootav.oz. 1¼
Bloodrootav.oz. 1¼
Poke rootav.oz. 1¼
Indian turnipav.oz. 1¼

Melt the pitch and turpentine together, add the tar, strain, add the other ingredients in fine powder, and incorporate well together.

When it is desired to have a more active preparation, and one which will act more promptly, add ½ av.ounce euphorbium, in powder to the above.

Plaster, Warming. (Emplastrum Calefaciens.)

See Plaster, Pitch, Cantharidal.

Plaster, White Lead.

See Plaster, Lead, White.

Potassa, Sulfurated. (Liver of Sulfur—Hepar Sulfuris—Sulfurated Potash—Sulfuret of Potassium.)

Sulphur, sublimedav.oz. 1
Potassium carbonate, dried.av.oz. 2

Mix the powdered and dried potassium carbonate thoroughly with the sulfur, and gradually heat the mixture, in a covered crucible (Hessian), which

should be not more than half filled with it, until the mass ceases to foam and is in a state of perfect fusion. Then pour the fused mass on a cold marble slab, and, after it has cooled, break it into pieces and keep in a well-stoppered bottle.—U. S. P. 1890, Brit. Pharm. and Germ. Pharm.

Potio Riveri.

See Solution of Sodium Citrate.

Poultices. (Cataplasms.)

A number of eclectic, Thomsonian, and other formulas for cataplasms (poultices) are here included. While the pharmacist does not, as a rule, make these preparations, it is only proper that he should have knowledge of them.

The U. S. P., N. F., Germ. Pharm. and Brit. Pharm. 1898 do not recognize any poultices, but several are mentioned in the Brit. Pharm. 1885 and in the Codex.

Poultice.

Thomsonian (from the Guide):

Make a strong tea of raspberry leaves or of No. 3, take a cracker, pounded fine, and powdered slippery elm bark, with some ginger, and make a poultice.

Poultice, Alum.

Alumgr. 30
White of one egg.

Mix well.

Poultice, Bread.

Heat crumbs of bread with enough sweet milk to form a poultice. A little fresh lard may be added, which prevents the skin from becoming sodden and wrinkled.

Poultice, Carrot. (Cataplasma Dauci or Carotæ.)

Carrots, fresh, scraped.....av.oz. 4
Corn mealav.oz. 1
Water, boiling, enough to make a cataplasm.—Eclectic.

Poultice, Capsicum.

Capsicum, powder,
Slippery elm, powder, each..
.....equal parts.
Water, warm, to form a poultice.

—Thomsonian (from Comfort's Practice).

Poultice, Catnip.

Catnip leaves steeped in water and thickened with slippery elm, ground flaxseed or fine corn meal.—Thomsonian (from Comfort's Practice).

Poultice, Charcoal. (Cataplasma Carbonis.)**I.**

Bread	av.oz.	2
Linseed meal	gr.	600
Wood charcoal, powder.....	gr.	180
Water	fl.oz.	10

Macerate the bread, for a short time, with the water, in a warm place, to soften it, then gradually add the linseed, stirring so as to make a uniform mixture. Then add 120 grains of charcoal, and when the poultice is prepared for application, sprinkle on its surface the remaining 60 grains of charcoal.

The formula of the Brit. Pharm. 1885 differs from this in directing 1½ av.-ounces of linseed and ½ av.ounce of charcoal.

II.

Charcoal, powder	parts	3
Slippery elm, powder.....	parts	2
Ginger, powder	part	1
Water, warm, to make a poultice.		

—Thomsonian (from Comfort's Practice).

Poultice, Chlorin. (Chlorinated Soda Poultice — Chlorin Cataplasm — Cataplasma Sodæ Chlorinata.)

Linseed meal	av.oz.	4
Water, boiling	fl.oz.	8
Solution of chlorinated soda.....	fl.oz.	2

Mix the linseed meal with the water and gradually add the solution.—Brit. Pharm. 1885.

Poultice, Corn Meal (Indian Meal Poultice.)

Stir corn meal into boiling water until of the proper consistence.

Poultice, Cranberry. (Cataplasma Oxyococi.)

Eclectic:

This is simply bruised ripe cranberries.

Poultice, Elm or Slippery Elm. (Cataplasma Ulmi.)

Stir powdered slippery-elm bark into

hot water, or a mixture of water and milk, sufficient to form a poultice.—Eclectic.

Poultice, Emollient and Stimulant.

Slippery elm, powder.....	parts	2
White pond lily root, powder.....	part	1
Cracker, pounded	part	1
Water, warm, to form a poultice.		

—Thomsonian (from Comfort's Practice).

Poultice, Hemlock. (Cataplasma Conii.)

Hemlock juice	fl.oz.	1
Linseed meal	av.oz.	4
Water, boiling	fl.oz.	10

Evaporate the juice to ½ fluidounce, and incorporate this with the meal and water previously mixed.—Brit. Pharm 1885.

The extract or fluid extract of conium might be used instead of the juice, though the juice only is directed by the Brit. Pharm.

Poultice, Linseed or Flaxseed. (Cataplasma Lini, Emolliens or Communis.)

Linseed meal.....		
.....av.oz.	4½	or sufficient
Water, boiling	fl.oz.	10

To the water add the linseed meal or sufficient to form a suitable poultice.

The Brit. Pharm. 1885 directed 4 av.-ounces of linseed meal to 10 fluidounces of boiling water.

Poultice, Lobelia. (Cataplasma Lobeliæ.)

To equal parts of powdered lobelia and slippery-elm bark, add sufficient of a weak lye.—Eclectic.

Poultice, Molasses.

Add wheat flour to molasses in sufficient quantity to form a soft poultice.

This is a useful application for burns and scalds.

Poultice, Mustard. (Cataplasma Sinapis or Rubefaciens—Sinapism.)

Mustard, white and black		
mixed, powder	av.oz.	2½
Linseed meal	av.oz.	2½
Water		sufficient

Mix the mustard with 2 or 3 fluid-ounces of boiling water, the linseed meal

with 6 or 8 fluidounces of boiling water, and then mix the two together.—Brit. Pharm. 1885.

Neither vinegar nor any alcoholic liquid should be used in making mustard poultice.

Poultice, Myrrh.

Equal quantities of the residue from No. 6 and slippery elm powder and add enough water to make a poultice.—Thomsonian (from Comfort's Practice).

Poultice, Poke Root. (Cataplasma Phytolacæ.)

Place fresh pokeroor in hot ashes to roast, and when sufficiently done, mash it and form a poultice.—Eclectic.

Poultice, Potato.

This is simply mashed boiled potatoes.

Poultice, Spice.

This is a domestic poultice prepared from the ordinary household spices, using equal measures of ground mustard, ginger, clove, cinnamon and allspice, and making into a poultice with warm vinegar.

Poultice, Stimulant and Astringent.

Composition powder,
Slippery elm, powder, each, equal parts.

Water, warm, to make a poultice.

Lard, a small amount.

—Thomsonian (from Comfort's Practice).

Poultice, Stramonium. (Cataplasma Stramonii.)

Bruise fresh stramonium leaves and add a small quantity of hot water, sufficient to form a poultice.—Eclectic.

Poultice, Wild Indigo.

Bark of the fresh root of wild indigo powdered fine.—Thomsonian (from Comfort's Practice).

Poultice, Yeast. (Cataplasma Fermentii.)

I.

Milk, tepidfl.oz. 8

Yeastfl.oz. 2

Slippery elm bark, powder, enough to make a poultice.—Eclectic.

The formula of the Brit. Pharm. 1885 differed in directing 6 fluidounces of

yeast to be mixed with an equal volume of water at 38 deg. C., incorporating 14 av. ounces of wheat flour, and placing near the fire until fermentation ensues when bubbles of carbonic acid gas are given off.

II. To yeast add a mixture of equal parts of ginger and rye or wheat flour, and put in a warm place till it begins to rise.—Thomsonian (from Comfort's Practice).

Powder of Acacia, Compound. (Pulvis Gummosus.)

Acacia, fine powderparts 3

Licorice, fine powderparts 2

Sugar, fine powderpart 1

—N. F.

The Germ. Pharm. directs 5 parts of acacia, 3 of licorice, and 2 of sugar.

The Swed. Pharm. directs a mixture of 1 part of althea, 2 of acacia, and 2 of sugar, and for this the proper title is Compound Powder of Althea.

Powder of Acetanilid, Ammoniated.

Sodium bicarbonatepart 1

Ammonium carbonateparts 2

Acetanilidparts 5

Sugar of milkparts 12

Triturate the ammonium carbonate and acetanilid intimately together, add the sodium bicarbonate and milk sugar, and mix thoroughly.—Cinc. Acad. Pharm.

Each 10 gr. contains $2\frac{1}{2}$ gr. acetanilid, 1 gr. of ammonium carbonate and $\frac{1}{2}$ gr. of sodium bicarbonate. The powder is (said to be) readily soluble in water.

The mixture should be preserved in well stoppered bottles.

It has no depressing effects like acetanilid alone but on the contrary it stimulates the heart and circulatory system.

Powder of Acetanilid, Compound.

I.

Acetanilidparts 7

Sodium bicarbonateparts 2

Caffeine (alkaloid)part 1

This is a favorite mixture in this country, especially for headache powders.—U. S. P. and Brit. Form.

II.

Acetanilid	parts 50
Sodium bicarbonate	parts 45
Caffeine (alkaloid)	parts 2
Tartaric acid	parts 3

Reduce the ingredients separately to a fine powder and mix them thoroughly.

This preparation is popularly prescribed in New Orleans, under the name of "Kamna-Fuga," as an antipyretic, and is claimed to have some advantages over acetanilid by itself.

Powder of Almond, Compound. (Confection of Almond.)

Sweet almond	parts 6
Sugar, fine powder	parts 3
Acacia, fine powder	parts 1

Blanch the almonds, then dry them thoroughly with a soft cloth, and rub them lightly in a mortar, until they form a mass of a smooth consistence. Mix the acacia and sugar, add them to the mass previously prepared, and rub the whole to a coarse powder, which is to be preserved in a lightly covered jar.

If 820 grains of this preparation be thoroughly triturated with 17 fluidounces of water, gradually added, and the mixture finally strained, the product will be about 16 fluidounces of Mixture of Almond, U. S. P.—N. F.

The Brit. Pharm. directs 8 parts of almond, 4 of sugar and 1 of acacia. The almonds, after blanching, should be dried in a warm place for 24 hours.

Powder of Aloes and Canella. (Hiera Picra — Aloetic Powder — Holy Bitter.)

Purified aloes	parts 4
Canella	part 1

Both should be in fine powder and be intimately mixed.—N. F.

Powder, Alum, Comp'd, Squibb's.

Camphor	part 1
Carbolic acid, crystal	parts 2
Dried alum, fine powder	parts 47

Dissolve the camphor in the liquefied carbolic acid, and thoroughly incorporate this with the alum.

This is used for indolent ulcers and sores, especially for veterinary use.

Powder, Anticatarrhal.

See Snuff, Catarrh.

Powder, Antimonial. (James' Powder — Jacob's Powder — Pulvis Jacobi—Compound Powder of Antimony—Pulvis Antimonialis.)

Antimony oxid	part 1
Calcium phosphate, precipitated	parts 2

—N. F. Appendix, U. S. P. 1890 and Brit. Pharm.

Dose of Brit. Pharm.: 3 to 6 grains.

Powder, Antiseptic, Soluble.

Salicylic acid	gr. 5
Carbolic acid	gr. 1
Eucalyptol	gr. 1
Menthol	gr. 1
Thymol	gr. 1
Zinc sulfate	gr. 128
Boric acid, impalpable powder	gr. 888

Triturate the salicylic acid and zinc sulfate to very fine powder; add the carbolic acid, eucalyptol, menthol and thymol, and continue the trituration, adding the boric acid, in small portions at a time, until a uniform impalpable powder is obtained.—N. F.

Powder, Aromatic.

Cinnamon saigon, No. 60 powder	parts 7
Ginger, Jamaica, No. 60 powder	parts 7
Cardamom, deprived of the capsules and crushed	parts 3
Nutmeg, No. 20 powder	parts 3

Triturate the cardamom and nutmeg with a portion of the cinnamon, until they are reduced to a fine powder, then add the remainder of the cinnamon and the ginger, and rub them together until they are thoroughly mixed.—U. S. P.

The corresponding preparation of the Brit. Pharm. is called Compound Powder of Cinnamon, and is prepared from equal parts of Ceylon cinnamon, cardamom seed, and Jamaica ginger.

Powder, Arsenical, Come's. (Cosmi's Powder.)

Red mercuric sulfid	parts 30
Arsenous acid	parts 10
Dragon's blood	parts 3
Charcoal, animal	parts 2

Triturate together to a very fine powder.—Germ. Pharm. 1st.

Powder of Bayberry, Compound. (Cephalic Powder—Pulvis Myricæ Compositus.)

Bayberry bark, powder,
Bloodroot, powder, each, equal parts
—Eclectic.

This is used alone or combined with common snuff as a snuff in catarrh, headache, etc.

The Thomsonian preparation known as Composition Powder (see Powder, Composition) is also known by the above name.

Powder of Bismuth, Compound.

The following was a favorite combination of Dr. S. H. Tewksbury, Portland, Me., now deceased. Since his death it has seemingly become popularized, and generally prescribed by physicians all over the country. It is not infrequently prescribed as Mistura Bismuthi Comp.

Acacia, powder,
Sugar, powder,
Ginger, powder,
Sodium bicarbonate,
Bismuth subnitrate, each, equal parts

Each article to be added separately and thoroughly incorporated and finally passed through a fine sieve.

Powder, Black. (Emmenagogue Powder—Pulvis Nigrum.)

Sulfurav.oz. 1
Myrrhav.oz. 1
Steel filingsav.oz. 1
Loaf sugarav.oz. 1
White winefl.oz. 8

Mix, and, by aid of a gentle heat, evaporate till nearly dry; pulverize the mass when cold.—Eclectic.

This is the formula as originally given. The substance is best dispensed in pill form. It is used in idiopathic amenorrhea, chlorosis, etc., in doses of 30 grains, 3 times a day.

Powder of Calomel and Jalap. (Calomel and Jalap.)

Calomelgr. 10
Jalap, fine powdergr. 20
Mix intimately.

When "Calomel and Jalap" is prescribed for an adult, without any specification of quantities, it is recommended

that the above mixture be dispensed as one dose.—N. F.

Powder of Camphor, Compound.

Tannic acidparts 2
Kinoparts 2
Camphorparts 2
Opiumpart 1

Each should be in fine powder and the whole should be well mixed.—Eclectic.

Make into 3½ gr. powders.

Powder, Cancer, Esmarch's. (Pulvis Anticarcinomaticus Esmarch—Pulvis Causticus Esmarch—Esmarch's Caustic Powder.)

Arsenous acidpart 1
Morphine hydrochlorid ...part 1
Calomelparts 8
Acacia, powderparts 48

—H.

Powder of Catechu, Compound.

Catechu (Gambir, U. S. P.) .parts 4
Kinoparts 2
Phatanyparts 2
Cinnamonparts 1
Nutmegpart 1

All should be in fine powder. Mix them intimately, pass the powder through a fine sieve, and afterwards rub it lightly in a mortar. Keep in a stoppered bottle.—N. F. and Brit. Pharm.

The dose given by the Brit. Pharm. is 10 to 40 grains.

Powder of Chalk, Aromatic. (Pulvis Cretæ Aromaticus.)

Cinnamon, Ceylonparts 4
Saffron, Spanishparts 3
Nutmegparts 3
Cloveparts 1½
Cardamompart 1
Prepared chalkparts 11½
Sugarparts 26

Mix the ingredients and reduce them to a fine powder. Pass this through a fine sieve, and afterwards rub it lightly in a mortar. Keep it in a stoppered bottle.

This preparation is equivalent to the Pulvis Cretæ Aromaticus of the Brit. Pharm. 1885. This authority adds the following note: "If a product of bright color be desired, the saffron may previously be moistened and triturated with

a little water or alcohol, or the fresh and faintly damp mixture may be subjected to considerable pressure in the triturating process."—N. F.

The preparation of the Brit. Pharm. 1885 differed from the above only in having 11 parts of chalk and 25 of sugar.

The present Brit. Pharm. differs from the 1885 edition in directing no saffron.

Powder of Chalk with Opium, Aromatic.

Aromatic powder of chalk.....parts 39

Powdered opiumpart 1

Mix it intimately.

Every 40 grains of this preparation contain 1 grain of powdered opium.—N. F. and Brit. Pharm.

Powder, Chalk, Compound.

Prepared chalkparts 3

Acacia, fine powder.....parts 2

Sugar, fine powder.....parts 5

—U. S. P.

On no account should precipitated chalk be used in mixture, as is sometimes done.

Powder of Charcoal, Compound. (Pulvis Carboni Ligni Compositus.)

Wood charcoalparts 4

Rhubarbparts 2

Sodium bicarbonatepart 1

All should be in fine powder and the whole well mixed.—Eclectic.

This is useful in dyspepsia attended with acidity, loss of appetite, distress after eating, etc.

Powder of Cinnamon, Compound.

See Powder, Aromatic, for this preparation of the Brit. Pharm.

Powder, Clarifying.

I. To facilitate the obtaining of perfectly bright solutions of essential oils in water, the use of a mixture of powdered paper, asbestos and kaolin in some such proportions as the following has been recommended:

Paper powder (obtained by rubbing dried white filter paper through a No. 20 sieve)part 1

Asbestos, siftedpart 1

Kaolinparts 20

Mix lightly together, finally sifting. The powder should be shaken up with the turbid liquid for a few minutes and poured on the previously wetted filter, the filtrate being returned until it passes through bright, which it does in a short time. The powder is not limited in its use to the solutions mentioned, but answers well for other liquids also.

II. D. recommends this mixture for wines, liqueurs and other alcoholic liquids:

Egg albumen, dried.....parts 2

Sugar of milk.....parts 2

Starchpart 1

Reduce all to No. 80 powder and mix well.

For one pint of liquid, use 8 to 40 grains of powder, according to the turbidity, agitate thoroughly, let stand for several days in a warm place, agitating occasionally, and filter.

Powder, Composition. (Compound Powder of Bayberry—Vegetable Powder—Vegetable Cold Powder —Pulvis Myricæ Compositus.)

Bayberry root barkparts 12

Gingerparts 6

Capsicumpart 1

Clovepart 1

Reduce the substances to a moderately fine powder, and mix thoroughly.—N. F.

In Thomson's Guide appears this formula:

Bayberry root bark.....lb. 2

Inner bark of common hem-

locklb. 1

Gingerlb. 1

Capsicumoz. 2

Cloveoz. 2

All to be in fine powder, and well mixed.

In the Thomsonian Materia Medica appear three "preparations":

First preparation is bayberry, 2 pounds, ginger, 1 pound, capsicum, 2 ounces, clove, 2 ounces.

Second preparation is bayberry, ginger, poplar, and hemlock bark, each, 1 pound, red or white oak bark, ½ pound, capsicum, 3 ounces, and clove, 2 ounces.

Third preparation is bayberry and gin-

ger each, 2 pounds, poplar and oak bark, each, 1 pound, capsicum, 3 ounces, and clove, 2 ounces.

In Comfort's Thomsonian Practice of Medicine this formula is given:

Bayberry root barklb... 3
Gingerlb. 1½
Capsicumoz. 3
Cloveoz. 3

All in fine powder; mix well.

For the similar eclectic preparation, see Powder of Bayberry, Compound.

Powder, Cooling. (Pulvis Refrigerans—Kjoelende Pulver.)

Oil sugar of lemon.....part 1
Potassium nitratepart 1
Potassium bicarbonateparts 6
—Danish Pharm.

The formula of the Norw. Pharm. differs from the above only in directing 6 1/3 parts of potassium bicarbonate.

Powder, Cough.

Mix 4 teaspoonfuls of skunk cabbage, 2 of hoarhound, 1 of Indian turnip, 1 of lobelia herb, 1 of capsicum, 1 of bayberry bark, 1 of dogsbane, and 1 of ladies' slipper root, all in powder and well mixed. To be taken in molasses.

—Thomsonian (from the Guide).

Lobelia herb,
Licorice root,
Skunk cabbage root,
.....each equal parts

—Thomsonian (from Comfort's Practice).

Powder of Culver's Root, Compound.

See Powder of Leptandra, Compound.

Powder of Cypripedium, Compound.

See Powder of Ladies' Slipper, Compound.

Powder, Digestive, Momberger's.

Rhubarbparts 2
Sennaparts 2
Magnesium carbonateparts 2
Potassium bitartratepart 1
Oil-sugar of anisepart 1

Reduce all to fine powder and mix well.

Powder, Dover's, Camphorated. (Beach's Diaphoretic Powder—Compound Powder of Ipecac and Opium.)

I.
Opiumpart 1

Ipecacparts 2
Camphorparts 4
Potassium bitartrateparts 16

All should be in powder and should be well mixed.—Eclectic.

There are other forms of camphorated Dover's powder in occasional use, as follows:

II. Selle's:

Ipecacgr. 2
Opiumgr. 4
Camphorgr. 8
Sugargr. 160

This is intended for 8 powders.

III. Richter's:

Ipecacgr. 1
Opiumgr. 2
Camphorgr. 1
Sugargr. 12

IV. Von Graefe's:

Ipecacgr. 3
Opiumgr. 6
Camphorgr. 30
Sugargr. 60

This is intended for 6 powders.

See also the regular Dover's powder, Powder of Ipecac and Opium.

Powder, Dusting, Anderson's. (Pulvis Anderson—Anderson's Powder—McCaull Anderson's Dusting Powder.)

This is a sedative drying powder employed by the famous London specialist in certain forms of wet eczema. The composition is variously given. These formulas are appended.

I.

Starchparts 16
Zinc oxidparts 8
Camphorpart 1

II.

Starchparts 16
Zinc oxidparts 3
Camphorpart 1

III.

Starchparts 16
Zinc oxidparts 4
Camphorparts 3

The latter was used by a prominent local physician making a specialty of skin diseases.

An impalpable powder must be pro-

duced by passing through fine bolting cloth.

Preserve in well-corked, wide-mouthed bottles.

Powder, Dyspeptic.

Capsicum	oz. 4
Golden seal	lb. $\frac{1}{2}$
Poplar bark	lb. 4
Sugar, brown	lb. 8

All in fine powder, mix well, and incorporate one ounce of essence of pennyroyal.—Thomsonian (from the *Materia Medica*).

Powders, Effervescent.

See Salts, Effervescent.

Powder, Effervescing. (Pulvis Aerophorus.)

Sodium bicarbonate	parts 26
Tartaric acid	parts 24
Sugar	parts 50

Or use $5\frac{1}{2}$ av. ounces of bicarbonate, 5 of acid, and $10\frac{1}{2}$ of sugar.

All should be in fine powder and perfectly dry, and should then be well mixed.—Germ. Pharm.

Preserve in well-stoppered bottles in a dry place.

Powder, Effervescing, with Magnesia. (Pulvis Aerophorus Cum Magnesia.)

Tartaric acid	part 1
Oleosaccharate of lemon	parts 2
Sugar, moderately fine powder	parts 3
Magnesium carbonate	parts 4

—Germ. Form.

Prepare and preserve like the preceding.

Powder of Elaterin, Compound.

Elaterin	part 1
Sugar of milk	parts 39

Triturate in a mortar until a fine powder is produced.

Dose, 1 to 4 grains.—Brit. Pharm.

Powder of Golden Seal, Compound. (Compound Powder of Hydrastis.)

Golden seal,	
Blue cohosh,	
Helonias, each	equal parts
Reduce to fine powder.—Eclectic.	

Powder, Gun. (Pulvis Pyrius—Pulvis Nitratis.)

Ordinary gunpowder is prepared by mixing five or six parts of potassium nitrate with one part each of wood charcoal and sulfur. However, the proportions used by different manufacturers vary more or less. Gunpowder was formerly used a great deal in medicine but its only pharmaceutical use now is as an occasional ingredient of veterinary prescriptions.

The following combination may be used for gunpowder when the latter is needed for veterinary or other mixtures:

Potassium nitrate	parts 15
Charcoal	parts 3
Sulfur	parts 2

Powder, Gun, White.

This formula may be used:

Potassium ferrocyanid	part 1
Sugar	part 1
Potassium chlorate	parts 2

Reduce each to powder separately, then mix well, but very carefully, using a bone or wooden spatula.

Powders, Homeopathic.

See Medications, Homeopathic.

Powder, Infant, Hufeland's. (Pulvis Infantium or Carminativum Hufeland—Pulvis Anodynus Infantium—Pulvis Puerorum Citrinus—Krampf, Wind, Kinder, or Beruhigungs Pulver.)

Saffron, Spanish	gr. 130
Anise	av.oz. $1\frac{1}{2}$
Magnesium carbonate	av.oz. 2
Valerian	av.oz. 2
Orris	av.oz. $2\frac{1}{2}$

All should be in fine powder and be well mixed.—H.

A cheaper preparation used as a substitute for the above is this:

Valerian	av.oz. $\frac{1}{2}$
Rhubarb	av.oz. $1\frac{1}{2}$
Oleosaccharate of fennel	av.oz. 3
Magnesium carbonate	av.oz. 6
—H.	

For other infant powders, see Powder of Magnesia and Rhubarb, Powder of Rhubarb, Compound, and Powder of Rhubarb and Magnesia, Anisated.

Powder of Iodoform, Compound.
(Naphthalin Iodoform.)

Iodoform, fine powderav.oz. 2
 Boric acid, fine powder.....av.oz. 3
 Naphthaleneav.oz. 5
 Oil of bergamotfl.dr. 2

Triturate the naphthalin with the oil, then mix it with the iodoform and acid, and triturate until a homogeneous powder is produced.

This powder is used in many cases, where a diluted preparation of iodoform, for external purposes, is desired. The odor of the iodoform is masked both by the oil of bergamot and the naphthalene.—N. F.

Powder of Ipecac and Opium. (Dover's Powder—Compound Powder of Ipecac—Opiated Powder of Ipecac.)

I.

Ipecac, No. 60 powderpart 1
 Opium, powderpart 1
 Sugar of milk, No. 30 powderparts 8

Rub together to a very fine powder.—U. S. P. and Germ. Pharm.

The U. S. P. 1870 directed potassium sulfate instead of milk sugar. The Brit. Pharm. also directs potassium sulfate. The Austr. Pharm. directs sugar instead of milk sugar or potassium sulfate.

II. The Eclectic "compound powder of ipecac" is as follows:

Ipecac,
 Pleurisy root,
 Bloodroot,
 Potassium nitrate, each.....equal parts
 Reduce to fine powder.

See also Powders, Dover's, Camphorated.

Powder of Ipecac and Opium, Compound.

See Powder, Dover's, Camphorated.

Powder of Jalap, Compound. (Pulvis Purgans.)

I.

Jalap, No. 60 powder.....parts 7
 Potassium bitartrateparts 13
 —U. S. P.

II.

Jalapparts 5
 Potassium bitartrateparts 9
 Gingerpart 1

All in fine powder, and be well mixed.—Brit. Pharm.

III. The Eclectic "compound powder of jalap," also called Antibilious Physic (or A. B. Physic) is as follows:

Senna, Alexandriaav.oz. 2
 Jalapav.oz. 1
 Clove or ginger.....gr. 60

All should be in powder and be well mixed.

This is an excellent purgative, the dose being 30 to 60 grains.

Powder of Kino, Compound. (Powder of Kino and Opium.)

Kino, fine powderparts 15
 Powdered opiumpart 1
 Ceylon cinnamon, fine powderparts 4

Mix them intimately, pass the mixed powder through a moderately fine sieve, and afterwards rub it lightly in a mortar.

Keep it in a stoppered bottle.—N. F. and Brit. Pharm.

Every 20 gr. of this preparation contain 1 gr. of powdered opium.

Powder of Ladies' Slipper, Compound. (Nerve Powder.)

Ladies' slipper root,
 Pleurisy root,
 Skunk cabbage root,
 Scullcap, each.....equal parts
 Reduce to fine powder.—Eclectic.

Powder of Leptandra, Compound.

Extract of leptandra, dried.....parts 2
 Resin of podophyllum.....part 1
 Sugar of milk.....parts 10

This is used as a chologogue cathartic, the dose being 8 grains repeated every hour or two until it operates freely.—Eclectic.

Powder, Licorice, Compound. (Pulvis Glycyrrhizæ or Liquiritiæ Compositus—Pulvis Pectoralis or Kurellæ—Kurella's or Pectoral Powder—Brust Pulver.)

I.

Licorice root, No. 80 powderav.oz. 11¾
 Senna, No. 80 powder.....av.oz. 9
 Sulfur, washedav.oz. 4
 Oil of fennelm. 100
 Sugar, fine powder.....av.oz. 25
 Mix the oil thoroughly with about

one-half of the sugar, add the remainder of the sugar, and the other ingredients, mix thoroughly, and pass through a No. 60 sieve.

Keep the product in well-closed vessels.—U. S. P.

While the above is the formula of the present U. S. P., it is probable that the older formula is the one still in common use. It is as follows:

Licorice root, fine powder.	av.oz. 8
Senna, fine powder.....	av.oz. 9
Sulfur, washed	av.oz. 4
Fennel seed, fine powder.	av.oz. 4
Sugar, fine powder.....	av.oz. 25

II. The formula of the Brit. Pharm. differs from the latter only in having 8 av. ounces of senna and 24 of sugar and in specifying sublimed instead of washed sulfur.

III.

Licorice root, fine powder.	av.oz. 7½
Senna, fine powder.....	av.oz. 7½
Fennel, moderately fine....	av.oz. 5
Sulfur, washed	av.oz. 5
Sugar, moderately fine....	av.oz. 25

—Germ. Pharm.

Powder of Lobelia, Compound. (Emetic Powder.)

Lobelia herb	gr. 60
Ipecac	gr. 40
Bloodroot	gr. 30
Skunk cabbage	gr. 30
Capsicum	gr. 10

Reduce all to fine powder and mix well.—Eclectic.

Powder of Magnesia and Rhubarb. (Compound Powder of Magnesia —Pulvis Magnesiae cum Rheo— Pulvis Infantium—Kinder Pul- ver—Infant Powder—Barne Pul- ver.)

I.

Magnesium carbonate	parts 10
Oleosaccharate of fennel...	parts 7
Rhubarb, fine powder.....	parts 3

Mix well.—Germ. Pharm.

II.

Magnesium carbonate,	
Oil-sugar of fennel,	
Rhubarb, fine powder,	
each.....	equal parts

—Norw. Pharm.

See also Powder of Rhubarb, Com-

pound and Powder of Rhubarb and Magnesia, Anisated, both of which are similar.

The similar Pulvis Infantium (or Puerorum) Ribke or Ribke's Infant Powder is composed of:

Magnesium carbonate	parts 12
Oleosaccharate of fennel...	parts 8
Rhubarb	parts 3

See also Powder, Infant, Hufeland's.

Powder of Mandrake, Compound. (Pulvis Podophylli Compositus— Compound Powder of Podophyl- lum.)

Mandrake	parts 2
Blue flag	parts 2
Bitter root (dogsbane).....	parts 2
Swamp milkweed (Asclepias incarnata)	parts 2
Bloodroot	part 1

—Eclectic.

This is cathartic and alterative, used in obstinate constipation, dyspepsia, scrofulous, rheumatic and syphilitic affections, etc., in doses of 30 to 60 grains, 3 times daily.

Powder, Milk, Humanized.

Peptonizing powder	gr. 35
Sugar of milk.....	gr. 965

Mix well.

This preparation is intended for convenient use in preparing humanized milk. An even teaspoonful approximates about 100 grains.—N. F.

Powder of Morphine, Compound. (Tully's Powder.)

Morphine sulfate	gr. 8
Camphor gum	gr. 170
Licorice root, No. 80 powder.	gr. 176
Precipitated chalk	gr. 180
Alcohol	sufficient

Rub the morphine with the chalk, added in portions of about 5 grains each, until it is thoroughly mixed, then rub the camphor with a small amount of alcohol until it is reduced to a powder, and mix this intimately with the licorice and the other powders. Finally pass the powder through a No. 40 sieve, pulverize the residue if any should be left on the sieve, add to the sifted powder, and mix thoroughly. Transfer to a well-stoppered bottle.—U. S. P.

Sixty-six and two-thirds parts of this powder contain one part of morphine sulfate.

Dr. Brinsmade's modification of the above, which is also in use, is as follows:

Morphine sulfate	gr. 8
Camphor	gr. 160
Sugar	gr. 160
Prepared chalk	gr. 160

Tully's powder is used for the same purposes and in the same doses as Dover's Powder.

Powder, Nephritic, Rademacher's.

Cochineal, powder	part 1
Calcined magnesia	parts 4
—H.	

Powder, Nerve.

Thomsonian (in Guide and Materia Medica):

This is powdered ladies' slipper root, also known as American valerian, umbil, and male and female nervine.

For the Eclectic nerve powder, see Powder of Ladies' Slipper, Compound.

Powder of Opium, Compound.

Opium	parts 3
Black pepper	parts 4
Ginger	parts 10
Caraway	parts 12
Tragacanth	part 1

All should be in powder and should be well mixed.—Brit. Pharm.

This contains 10 per cent. of opium. It is used principally for making confection of opium.

Dose, 2 to 10 grains.

Powder of Pepsin, Compound. (Pulvis Digestivus.)

Saccharated pepsin	av.oz. 1
Pancreatin (U. S. P.)	av.oz. 1
Diastase	gr. 30
Lactic acid	m. 30
Hydrochloric acid	m. 60
Sugar of milk	av.oz. 4½

Add the acids gradually to the sugar of milk, and triturate until they are thoroughly mixed. Mix the pepsin, pancreatin and diastase and then incorporate this mixture, by trituration, with the sugar of milk mixture. Finally, rub the mixture through a hair sieve, and preserve the powder in bottles.—N. F.

The best commercial variety of diastase, capable of converting the largest comparative amount of starch into dextrin and glucose, should be used for this preparation. The pepsin should be of the strength of 1 to 300. The pancreatin should be of the quality described under Powder, Peptonizing, which see. The lactic acid should contain 75 per cent. of absolute acid; the hydrochloric acid should contain 32 per cent. of absolute acid.

Powder, Peptonizing. (Compound Pancreatic Powder.)

Pancreatin (U. S. P.)	part 1
Sodium bicarbonate	parts 4
Mix them by trituration.	

If pancreatin of proper strength is not available, any other commercial preparation of the pancreas, as, for instance, the extract, may be used in place of it, provided it attains the required standard.

—N. F.

The test of the U. S. P. for pancreatin is as follows:

If there be added to 100 cc. of tepid water, contained in a flask, 0.28 gm. of pancreatin and 1.5 gm. of sodium bicarbonate, and afterwards 400 cc. of fresh cow's milk previously heated to 38 deg. C., and if this mixture be maintained at the same temperature for 30 minutes, the milk should be so completely peptonized that if a small portion of it be transferred to a test tube and mixed with some concentrated nitric acid, no coagulation should occur.

Peptonized milk prepared in the manner just described, or even when the process is allowed to go on to the development of a very distinct, bitter flavor, should not have an odor suggestive of rancidity.

Twenty-five grains of the above powder are sufficient to peptonize 1 pint of fresh cow's milk, by proceeding in the following manner:

Add the powder to 4 fluidounces of tepid water, contained in a suitable flask, and afterwards add 1 pint of fresh cow's milk, previously heated to 38 deg.

C. Maintain the mixture at this temperature during 30 minutes, then transfer the flask to a cold place.

Milk thus peptonized should not be used when it has been kept over 24 hours, or when it has developed a bitter taste.

The N. F. also gives a formula for a diluted peptonizing powder intended for the convenient preparation of humanized milk under the name Powder, Milk, Humanized.

Powder of Pink Root, Compound.
(King's Entozoic Powder—Compound Powder of Spigelia.)

Pink root	part 1
Bitter root (dogbane).....	part 1
Swamp milkweed (Asclepias incarnata)	part 1
Podophyllum	part 1
Balmony	parts 2

All should be in very fine powder and the whole well mixed.—Eclectic.

This is used as an anthelmintic. The dose for a child 1 year old is 5 to 8 grains given every hour or two until it operates freely.

Powder of Pleurisy Root, Compound.
(Pulvis Asclepias Compositus.)

Pleurisy root	parts 4
Spearmint	parts 4
Sumach berries	parts 4
Bayberry bark	parts 2
Skunk cabbage	parts 2
Ginger	part 1

All should be in powder and should be well mixed.—Eclectic.

Powder of Podophyllin, Compound.
(Hydragogue Powder—Compound Powder of Resin of Podophyllum.)

Podophyllin	part 1
Potassium bitartrate	parts 45

Mix well.—Eclectic.

Dose, 20 grains every 2 hours until it operates sufficiently.

Powder of Podophyllum, Compound.

See Powder of Mandrake, Compound.

Powder of Quinine, Compound.

Quinine sulfate,
Iron ferrocyanid, each..equal parts
Reduce to fine powder.

This powder is tonic, febrifuge and antiperiodic.—Eclectic.

Powder of Rhubarb, Compound.
(Gregory's Powder—Gregory's Laxative Powder—Powder of Magnesia and Rhubarb—Pulvis Infantum—Pulvis Antacidus—Infant Powder—Kinder Pulver.)

I.

Rhubarb, No. 60 powder....	parts 5
Light magnesia	parts 13
Ginger, No. 60 powder.....	parts 2

The proportions of the Brit. Pharm. are 4 of rhubarb, 12 of magnesia and 2 of ginger. This work states that if a less bulky powder is desired, the heavy magnesia may be used instead of the light variety.

—U. S. P.

See also Powder of Magnesia and Rhubarb and Powder of Rhubarb and Magnesia, Anisated, both of which are similar to the above.

II. The Eclectic compound Powder of Rhubarb, also called Neutralizing Powder, is prepared as follows:

Rhubarb,
Potassium bicarbonate,
Peppermint leaves, each, equal parts
Each should be in fine powder and the whole should be well mixed.

Powder of Rhubarb and Magnesia, Anisated. (Compound Anise Powder.)

Rhubarb, fine powder....	av.oz. 2
Heavy calcined magnesia..	av.oz. 4
Oil of anise.....	fl.dr. 3½
Alcohol	fl.dr. 4½

Mix the powders, add the oil previously dissolved in the alcohol, and triturate until a uniform mixture results.

See also Powder of Rhubarb, Compound, and Powder of Magnesia and Rhubarb which are both similar to the above.—N. F.

Powder of Scammony, Compound.

Resin of scammony.....	parts 4
Jalap	parts 3
Ginger	part 1

All should be in fine powder, and be well mixed.

Dose, 10 to 20 grains.—Brit. Pharm

Powders, Seidlitz. (Compound Effervescing Powder — Effervescent Tartarated Soda Powder—Abfuehrendes Brause Pulver—Pulvis Aerophorus Laxans or Seidlitzensis or Aperiens—Pulvis Effervescens Compositus or Aperiens.)

Sodium bicarbonate, dried and fine powder.....gr. 40
 Rochelle salt, dried and fine powdergr. 120
 Tartaric acid, dried and fine powdergr. 35

Mix the first two powders intimately and wrap in paper of some pronounced hue, such as blue. Wrap the acid in another paper of some color other than that used for the preceding, white, for example.

Keep the powders in well-closed vessels.—U. S. P.

The formula of the Brit. Pharm. differs from the above only in directing 38 grains of tartaric acid.

The Germ. Pharm. directs 2.5 grams of sodium, 2.7 of rochelle salt, and 2 of tartaric acid.

Powder, Soda. (Effervescing Powder—Pulvis Effervescens—Pulvis Aerophorus Anglicus — Englisches Brause Pulver—Brus Pulver.)

Sodium bicarbonategr. 30
 Tartaric acidgr. 25
 Both should be in fine powder.

The two substances should be placed in separate papers, like seidlitz powder, the sodium salt to be wrapped in a blue paper, the acid in a white paper.

—U. S. P. 1870.

The Germ., Norw. and Dan. Pharms. directs 2 grams of sodium bicarbonate and 1.5 of tartaric acid.

Powder, Styptic. (Red Powder.)

Ferrous sulfate, powder.....parts 2
 Alum, powderpart 1

Mix them and apply strong heat until a reddish product is obtained; powder when cold.—Eclectic.

Powder of Sulfur and Cream of Tartar. (Sulfur and Cream of Tartar.)

The proper proportion for combining

these substances is 1 part of sulfur and 2 of cream of tartar.

Powder of Tragacanth, Compound.

Tragacanthpart 1
 Acaciapart 1
 Starchpart 1
 Sugarparts 3

All should be in fine powder and be well mixed. "Starch" of the Brit. Pharm. is wheat, corn or rice starch.

—Brit. Pharm.

Pulp of Cassia Fistula. (Cassien Mus.)

Free the pulp of cassia fistula as far as possible from the woody walls and partitions and the seeds, macerate in warm water till thoroughly softened, rub through a hair sieve, evaporate in a porcelain vessel to a very soft extract, to every 3 parts by weight of this, add 1 part of powdered sugar, and evaporate the whole on a water bath to suitable consistence.—Austr. Pharm.

Pulp, Colocynth.

This is the dried pulp of the fruit of colocynth, freed from seeds.—Brit. Pharm.

Pulp, Prune. (Pflaumen Mus.)

Boil cut prunes with water, stirring constantly, until thoroughly softened, press through a hair sieve, and evaporate on a water bath to thick extract consistency. To every 3 parts by weight add 1 part of powdered sugar, and evaporate on a water bath to suitable consistence.—Austr. Pharm.

Pulp, Tamarind, Purified. (Tamarinden Mus.)

Soften commercial tamarind pulp uniformly with hot water, rub through a coarse sieve, evaporate in a porcelain vessel on a water bath to thick extract consistency, and to every 5 parts by weight of pulp add 1 part of powdered sugar.—Germ. Pharm.

Pyroxylin. (Soluble Gun Cotton—Colloxylin—Collodion Cotton.)

The present U. S. P. describes this as a product obtained by the action of nitric and sulfuric acids on cotton and consisting chiefly of cellulose tetranit-

rate, but gives no process. The U. S. P. 1890, however, did give an excellent working process which is here given.

I.

Cotton, purified (absorb-ent)av.oz. 1
Nitric acidav.oz. 14 or fl.oz. $9\frac{1}{8}$
Sulfuric acid...av.oz. 22 or fl.oz. $11\frac{1}{2}$
Alcohol, stronger ether, water, eachsufficient

Mix the acids gradually in a glass or porcelain vessel, and, when the temperature of the mixture has fallen to 32 deg. C., add the cotton. By means of a glass rod imbue it thoroughly with the acids, and allow it to macerate, until a sample of it, taken out, thoroughly washed with a large quantity of water, and subsequently with alcohol, and pressed, is found to be soluble in a mixture of 1 volume of alcohol and 3 of stronger ether. Then remove the cotton from the acids, transfer it to a larger vessel, and wash it, first, with cold water, until the washings cease to have a sour taste, and then with boiling water, until they cease to redden blue litmus paper. Finally, drain the pyroxylin on filter paper, and dry it in small, detached pellets, by means of a water or steam bath, at a temperature not exceeding 60 deg. C.—U. S. P. 1890.

It should be kept in cartons, protected from light.

Purified cotton, consists of almost pure cellulose, which is converted by the above treatment into cellulose nitrates. Other pure forms of cellulose may be used, but the cotton is the most convenient.

The acids must be of U. S. P. strength, the nitric, 68 p. c., the sulfuric, $92\frac{1}{2}$ p. c., of absolute acid.

II.

Cotton, purifiedav.oz. 1
Sulfuric acid, pure, $92\frac{1}{2}$ p. c. fl.oz. 5
Nitric acid, pure.....fl.oz. $4\frac{3}{4}$
Distilled watersufficient

Mix the acids in a porcelain mortar, immerse the cotton in the mixture, and after it is thoroughly wetted by the acids, stir it for 3 minutes with a glass

rod; wash the cotton with distilled water until free from acid, drain it on filter paper, and dry on a water bath.—Brit. Pharm.

III.

Cotton, purified'av.oz. 1
Nitric acid, crude.....av.oz. $7\frac{1}{4}$
Sulfuric acid, crude.....av.oz. $18\frac{1}{4}$

Cautiously mix the nitric acid with the sulfuric acid; when the temperature of the liquid has become reduced to 20 deg. C., add to it the cotton, and allow to remain at a temperature of 15 to 20 deg. C. Transfer the cotton to a funnel, allow the acid to drain for 24 hours, then wash with water until the washings are no longer acid, express the wool, and dry at a temperature not exceeding 25 deg. C.—Germ. Pharm.

The crude sulfuric acid of the Germ. Pharm. contains 91 p. c. of absolute acid and has a sp. gr. of 1.83; the crude nitric acid contains 61 p. c. of absolute acid, sp. gr. 1.38 to 1.40.

Rademacher's Preparations.

Rademacher was a physician who lived about one hundred years ago in Germany. He entertained peculiar ideas regarding the practice of medicine, as well as the preparation and action of drugs. Many of his peculiar preparations are prescribed in this country by the older German physicians, and more recently some of them have been employed by physicians partial to the Eclectic school.

This class of preparations includes the following:

1. Drops, Dysmenorrhea.
2. Extract of Tobacco.
3. Magnesium Tartrate.
4. Mixture, Copper.
5. Mixture, Diarrhea.
6. Mixture, Iron.
7. Ointment, Calamine.
8. Ointment, Iodin.
9. Ointment, Shepherd's Purse.
10. Pills, Zinc Acetate.
11. Plaster, Miraculous.
12. Powder, Nephritic.
13. Solution of Calcium Chlorid.

14. Solution of Sodium Nitrate.
15. Solution, Anodyne Turpentine.
16. Tincture of Celandine.
17. Tincture of Cochineal.
18. Tincture of Colocynth Seed.
19. Tincture of Copper Acetate.
20. Tincture of Golden Rod.
21. Tincture of Hips.
22. Tincture of Iron Acetate.
23. Tincture of Mary Thistle.
24. Tincture of Mugwort Root.
25. Tincture of Nux Vomica.
26. Tincture of Shepherd's Purse.
27. Water, Acorn.
28. Water, Castor.
29. Water, Nux Vomica.
30. Water, Quassia.
31. Water, Tobacco.

Formulas for making these preparations may be found elsewhere in this book, under the proper respective headings.

Resin of Cannabis Indica.

See Extract of Cannabis Indica.

Resin of Copaiba.

The residue left after distilling the volatile oil from copaiba balsam.—U. S. P. 1890.

Resin of Jalap.

I.

Jalap, No. 60 powder.....av.oz. 8
Alcohol, water, each.....sufficient

Moisten the powder with $2\frac{1}{2}$ fluidounces of alcohol, pack it firmly in a cylindrical percolator, and then add enough alcohol to saturate the drug and leave a stratum of liquid above it. When the liquid begins to drop from the percolator close the lower orifice and having closely covered the percolator, macerate for 48 hours. Then allow the percolation to proceed, gradually adding alcohol until 19 fluidounces of percolate are obtained or until the percolate ceases to produce more than a slight turbidity when dropped into water. Distil off the alcohol by means of a water bath until the percolate is reduced to the weight of 2 av. ounces, and add the latter, slowly, with constant stirring, to

23 fluidounces of water. When the precipitate has subsided, decant the supernatant liquid, and wash the precipitate twice, by decantation, with fresh portions of hot water. After having drained off all the liquid, transfer the resin to a porcelain dish and heat it to dryness on a water bath.—U. S. P.

The U. S. P. requires jalap to yield not less than 8 per cent. of resin, but the root may yield a great deal more or a great deal less, and therefore the percolation with alcohol should be continued until the percolate gives scarcely any turbidity with water. Should the root contain much less than 8 p. c. of resin, as much as 19 fluidounces of percolate need not be collected.

II.

Jalap, No. 40 powder.....av.oz. 8
Alcohol, distilled water,
eachsufficient

Digest the drug with twice its weight of alcohol in a covered vessel, heating gently, for 24 hours, transfer to a percolator, and when the liquid ceases to pass, continue percolation with alcohol until nothing more is dissolved. Add to the percolate obtained, 4 fluidounces of distilled water, remove the alcohol by distillation, transfer the residue while hot to an open dish, allow it to become cold, pour off the supernatant fluid from the resin, wash this 2 or 3 times with hot distilled water, and dry.—Brit. Pharm.

III.

Jalap, coarse powder.....av.oz. 8
Alcoholfl.oz. 54

Digest the jalap with 36 fluidounces of alcohol at a temperature of 35 to 40 deg. C. for 24 hours, agitating occasionally, express, digest the residue with the remainder of the alcohol as before, and again express. Mix the two liquids, filter, distil or evaporate off the alcohol, wash the residue with warm water until the washings are colorless, and dry the resin on a water bath, stirring constantly.—Germ. Pharm.

**Resin of Podophyllum. (Podophyllin
—Resin of Mayapple or Mandrake.)**

I.

Podophyllum root, No. 60
powderav.oz. 16
Hydrochloric acid, U. S. P.fl.dr. 1¼
Alcohol, water, each.....sufficient

Moisten the drug with 7½ fluidounces of alcohol, pack it firmly in a cylindrical percolator, and add enough alcohol to saturate the powder and leave a stratum of liquid above it. When the liquid begins to drop from the percolator, close the lower orifice, and, having closely covered the percolator, macerate for 48 hours. Then allow the percolation to proceed, gradually adding alcohol, until 25 fluidounces of percolate are obtained, or until the percolate ceases to produce more than a slight turbidity when dropped into water. Distil off the alcohol by means of a water bath, until the percolate is reduced to the consistence of thin syrup, and pour it slowly, with constant stirring, into 16 fluidounces of water, previously cooled to a temperature below 10 deg. C. and mixed with the acid. When the precipitate has subsided, decant the supernatant liquid, and wash the precipitate twice, by decantation, with fresh portions of cold water. Spread it, in a thin layer, upon a strainer, and dry the resin by exposure to the air in a cool place, protected from light. Should it coalesce during the drying, or aggregate into lumps having a varnish-like surface, it should be removed, broken in pieces, and rubbed in a mortar. As this is liable to happen during warm weather, the preparation is best made in cold weather.—U. S. P.

Owing to its being a powerful irritant, great care must be exercised not to get any of this resin into the eyes.

II.

Podophyllum, No. 40
powderav.oz. 16
Alcohol.....fl.oz. 58 or sufficient
Distilled water, hydrochloric
acid, eachsufficient
Exhaust the drug with the alcohol by

percolation, and recover the greater portion of the alcohol from the percolate by distillation. Pour the residue slowly, with constant stirring, into 3 times its volume of distilled water, previously acidulated with 1/24 its bulk of hydrochloric acid. Allow the mixture to stand for 24 hours, wash the resin on a filter with distilled water, and dry at a temperature not exceeding 38 deg. C.—Brit. Pharm.

Resin of Scammony.

I.

Scammony (so-called “gum
scammony”)av.oz. 4
Alcohol, water, each.....sufficient

Digest the scammony with successive portions of boiling alcohol until it is exhausted. Mix the tinctures, and reduce the mixture to a syrupy consistence by distilling off the alcohol. Then add the residue in a thin stream, with active stirring, to 10 fluidounces of water, separate the precipitate formed, wash it thoroughly with water, and dry it with a gentle heat.

II.

Scammony root, coarse
powderav.oz. 8
Alcohol, distilled water,
eachsufficient

Exhaust the drug with alcohol by percolation, recover most of the alcohol from the percolate by distillation, slowly pour the residue into 3 times its volume of distilled water, constantly stirring, allow the mixture to stand for 24 hours, wash the resin on a filter with distilled water, and dry on a water bath.—Brit. Pharm.

Resinoids.

See Concentrations.

Sal Alembroth.

Mercuric chlorid,
Ammonium chlorid,
each.....equal parts
Mix well and make a fine powder.

**Salt, Carlsbad, Artificial. (Sal Carolum Factitium—Sal Therma-
rum Carolinarum Factitium.)**

I. In a dry, amorphous (powder) form

(N. F. and Germ. Pharm.)—also known as German Cathartic Salt:

Potassium sulfate	parts 1
Sodium chlorid	parts 9
Sodium bicarbonate	parts 18
Sodium sulfate, dried.....	parts 22

Triturate the ingredients, previously well dried, to a fine, uniform powder. The Germ. Pharm. directs a moderately fine powder.

The dried sodium sulfate is prepared by slowly drying the crystalline salt until it has lost one-half of its weight.

II. In a crystalline form (N. F.):

Potassium sulfate	parts 2
Sodium chlorid	parts 18
Sodium carbonate, clear crystal	parts 61
Sodium sulfate, crystal.....	parts 88
Distilled water	parts 50

Dissolve the potassium sulfate and sodium chlorid in the water, and add this solution to the other two salts, previously melted in a tared capsule and at a gentle heat in their own water of crystallization. Evaporate the mixture to about 180 parts, set it aside in a cool place, and stir frequently, so as to prevent the formation of large crystals, taking care, however, that none of the salt separate in a pulverulent form. Distribute any remaining water of crystallization uniformly over the crystals, and dry the whole mixture sufficiently by exposure to air, so that it will retain its crystalline character.

A solution of about 16 grains of the dry, or about 27 grains of the crystalline salt, in 6 fluidounces of distilled water, represents an equal volume of Carlsbad water (Sprudel) in its essential constituents.

The salts employed in the preparation of the crystalline form must have been purified by recrystallization.

For the latter, the Germ. Form. has a somewhat different formula, as follows:

Sodium chlorid	part 1
Sodium carbonate, crystal.....	parts 2
Sodium sulfate	parts 5
Water, hot	parts 12

Dissolve the salts in the hot water, filter the solution, and evaporate the

filtrate until a film begins to form on the surface, then set it aside to crystallize. Separate the crystals from the mother liquid and transfer them (without washing them with water) to bottles. Reject the mother liquid.

The resulting crystals are colorless, with a tendency to effloresce, and are soluble in $2\frac{1}{2}$ parts of water.

Salts, Effervescent.

The effervescent salts or powders, for which formulas are here given, are most conveniently and efficiently dispensed in the form of fine powders, because in this condition they can be made extemporaneously and with an assurance of their freshness and efficiency. The popular demand, however, seems to be for granular effervescent salts, the preparation of which requires certain modifications of the formulas, important only in so far as they enable the dispenser to granulate the powder in a convenient and expeditious manner.

Effervescent powders or salts are composed of the medicinal agent in admixture with an alkaline bicarbonate, an organic acid, and sugar. The proportion of the medicinal agent is dependent upon its dose, that of the alkaline bicarbonate and of the organic acid is dependent upon their molecular relation to each other, while the proportion of sugar is dependent upon the quantity necessary as a sweetening agent and diluent. The sugar is now frequently omitted.

The ingredients for making the fine pulverulent form of effervescent powders are: The medicinal agent, sodium bicarbonate, tartaric acid and sugar, and it is necessary that these be well dried before mixing them.

To make the granular form of effervescent salts the ingredients need not be dried, unless specially directed, and the ingredients are the same as for the pulverulent form, with the single exception that one-half the molecule of tartaric acid is replaced by one-half a molecule of powdered citric acid,

In order to facilitate the manufacture of effervescent salts, the revised National Formulary recognizes three new preparations, viz.: saccharated citric acid, saccharated tartaric acid, and saccharated sodium bicarbonate.

Saccharated citric acid is prepared by mixing 5 av. ounces of citric acid with 3 av. ounces of sugar, each to be in very fine powder.

Saccharated tartaric acid is prepared by mixing $6\frac{3}{4}$ av. ounces of tartaric acid with $3\frac{3}{4}$ av. ounces of sugar, each to be in very fine powder.

Saccharated sodium bicarbonate is prepared by mixing 6 av. ounces of sodium bicarbonate with 2 av. ounces of sugar, each to be in very fine powder.

The ingredients of these preparations should be intimately mixed, and should be preserved in well-stoppered bottles.

The proportion of sugar in these saccharates is so adjusted that when either of the acid saccharates is mixed with an equal weight of the alkaline saccharate, the acid and alkali are in molecular relation to each other, and, when dissolved in water, will form the neutral tartrate and citrate of sodium respectively.

With these three saccharates in stock, it becomes possible to make effervescent powders or salts quickly with any medicinal agent that may be prescribed, their use being exemplified by the following general formulas:

I. *Fine Powder:*

Medicinal agent, fine powder	av.oz. 2
Saccharated sodium bicarbonate	av.oz. 19
Saccharated tartaric acid.....	av.oz. 19

Triturate the ingredients until a uniformly mixed powder is obtained. In order to insure permanence of the product, the ingredients should be well dried before mixing:

II. *Granular Salt:*

Medicinal agent, fine powder	av.oz. 2
Saccharated sodium bicarbonate	av.oz. 19

Saccharated tartaric acid.....	av.oz. $9\frac{1}{2}$
Saccharated citric acid.....	av.oz. $9\frac{1}{2}$

Mix the ingredients (not dried) in a mortar, transfer them to an evaporating dish, and heat on a water bath, kept at 60 to 71 degrees C., under constant stirring with a wooden spatula, until dry and uniformly granular.

The saccharated citric acid, being made from crystallized citric acid containing one molecule of water of crystallization, supplies the moisture necessary to cause the powder, when heated, to cake and adhere together. If the somewhat pasty mass is then stirred with the spatula, small granules are readily formed, and these become firm when completely dried.

Another method of making the granular effervescent salts is to add to either of the above mixtures just enough alcohol to form a pasty mass, then rubbing this through a No. 20 porcelain colander, and drying the product in a drying room at a gentle heat. The powders should be well dried and powdered before use. The alcohol used should be just sufficient to form a pasty mass, as an excess would make the drying require a longer period of time, and at the same time would prove a serious waste.

The alcohol method of making effervescent salts is recognized by the U. S. P. and the first edition of the N. F., the heat method by the revised N. F.

It is, of course, not always that the proportion of the ingredients is the same as in the above general formulas. There may, for example, be more or less of the medicinal agent, and it may be necessary to add an extra amount of sugar. It is not necessary, either, to use any of the saccharates mentioned, but instead the alkaline bicarbonate, acid, sugar and medicinal agent or agents may be employed.

Throughout the process of making these "salts," contact with metals should be carefully avoided.

The mixtures should always be pre-

served in well-stoppered, wide-mouthed bottles.

The following formulas for effervescent salts are taken from standard works of reference.

Salt, Effervescent, of Antipyrin. (Effervescent Phenazone.)

Antipyrin	av.oz. 1
Sugar	av.oz. 2
Citric acid	av.oz. 2
Tartaric acid	av.oz. 3
Sodium bicarbonate	av.oz. 5¾

Use all in powder. Mix the antipyrin and two acids, and with this incorporate the sodium bicarbonate and sugar previously mixed. Place in a enameled iron evaporating dish and apply heat sufficient to cause the mixture to assume a granular form, and separate into granules of a convenient size by means of a suitable sieve. Dry the granules at a temperature not exceeding 120 deg. F.—Brit. Form.

Each heaping teaspoonful will contain about 7½ gr. of antipyrin.

Salt, Effervescent, of Citrated Caffeine.

Citrated caffeine	av.oz. 1
Citric acid	av.oz. 5
Tartaric acid	av.oz. 7½
Sodium bicarbonate	av.oz. 14¼

The tartaric acid and sodium bicarbonate should be well dried and triturated to fine powder before use; the citric acid should be used in the form of uneffloresced crystals. Reduce the latter to powder and mix it intimately with the citrated caffeine and tartaric acid, then thoroughly incorporate the sodium bicarbonate. Place the mixed powders on a plate of glass or in a suitable dish, in an oven heated to between 93 and 104 deg. C. When the mixture has acquired a moist consistency by the aid of careful manipulation with a wooden spatula, rub it through a No. 6 tinned-iron sieve and dry the granules at a temperature not exceeding 54 deg. C.

Keep the product in well-stoppered bottles.—U. S. P.

This is an entirely different process from that of the U. S. P. 1890. The

preparation of the latter contained sugar and was granulated with alcohol. It was as follows:

Caffeine	av.oz. ¼
Citric acid	av.oz. ¼
Tartaric acid	av.oz. 7½
Sodium bicarbonate	av.oz. 8¾
Sugar	av.oz. 8¾

Granulate by means of alcohol as described under Salts, Effervescent. This mixture contains 2 per cent. of citrated caffeine, whereas that of the present U. S. P. contains 4 per cent. If desired, the caffeine and citric acid in this mixture may be increased to ½ ounce each. If desired this mixture may be used and dispensed in powder form.

Salt, Effervescent, of Caffeine Hydrobromid.

Caffeine hydrobromid.....	av.oz. ½
Sugar	av.oz. 2¼
Citric acid	av.oz. 2¼
Tartaric acid	av.oz. 3
Sodium bicarbonate	av.oz. 5¾

Use all in powder. Mix the caffeine with the two acids, and incorporate with sodium bicarbonate and sugar previously mixed. Place in an enameled-iron evaporating dish, and apply heat sufficient to cause the mixture to assume a granular form and then separate into granules of a convenient size by means of a suitable sieve. Dry the granules at a temperature not exceeding 120 deg. F.—Brit. Form.

Each heaping teaspoonful contains about 4 gr. of caffeine hydrobromid.

Salt, Effervescent (Artificial), Carlsbad.

Artificial Carlsbad salt (in form of dry powder)....	av.oz. 4½
Saccharated sodium bicarbonate	av.oz. 10¼
Saccharated tartaric acid....	av.oz. 10¼

Mix the ingredients, previously well dried, and triturate them until a uniform powder is obtained.

If desired in the granular form, substitute saccharated citric acid, not dried, for one-half of the saccharated tartaric acid, and prepare the granulated compound as directed under the general formula.—N. F.

A solution of about 90 gr. of this preparation in 6 fluidounces of distilled water represents an equal volume of Carlsbad water (Sprudel) in its essential constituents.

The preparation of the Brit. Form. differs from this only in having 1 gr. of saccharin added to each 4 av.ounces of effervescent salt.

Salt, Effervescent, of Iron Citrate.

Iron pyrophosphate, soluble.....av.oz.	2
Citric acid	5
Sodium bicarbonate	5
Sugar	10

Triturate the iron salt to powder, add the other ingredients, mix thoroughly in a porcelain mortar, and gently heat the whole (with mortar) on a water bath, triturating constantly until a moist mass is formed, which agglutinates sufficiently so it may be passed through a sieve. Then dry and bottle the product in the usual manner.—Germ. Pharm.

The above forms a white product; a yellowish one may be prepared by substitution of iron citrate for the pyrophosphate as in the following:

Iron citrate, soluble.....av.oz.	1
Sodium bicarbonate	10
Tartaric acid	7
Citric acid	1
Sugar	8
Alcohol	7

Reduce the iron salt to very fine powder, add the other solids in fine powder, mix well, warm slightly in an evaporating dish, moisten with the alcohol, and sift dry, and bottle in the usual manner.

—D.

Properly speaking, the first "iron citrate" is not a citrate, but a pyrophosphate.

Salt, Effervescent, of Iron Citrate with Magnesia (or Iron and Magnesium Citrate.)

Iron citrate, soluble.....av.oz.	1
Magnesium carbonate	1½
Sodium carbonate	10
Tartaric acid	8
Citric acid	1½
Sugar	8
Alcohol	7

Prepare like the preceding.—D.

Salt, Effervescent, of Iron and Quinine Citrate.

Soluble citrate of iron and quinine	gr. 71
Saccharated sodium bicarbonate	av.oz. 8
Saccharated tartaric acid.....	av.oz. 8

Mix the ingredients, previously well dried, and triturate them until a uniform powder is obtained.

If desired in the granular form, saccharated citric acid may be substituted for one-half of the tartaric acid, then follow the rules of the general formula.—N. F.

Ninety grains (or about a heaped teaspoonful) of this preparation represent about 1 gr. of citrate of iron and quinine.

Salt, Effervescent, of Iron Phosphate.

Iron phosphate, soluble, very fine powder	gr. 172
Saccharated sodium bicarbonate	av.oz. 8
Saccharated tartaric acid.....	av.oz. 8

Mix the ingredients, previously well dried, and triturate them until a uniform powder is obtained.

If desired in the granular form, follow the rules of the general formula, substituting saccharated citric acid for one-half the saccharated tartaric acid, heaping, etc.—N. F.

Ninety grains (about a heaped teaspoonful) represent about 2 gr. of iron phosphate.

Salt, Effervescent, of Lithium Citrate.

Lithium citrate	gr. 360
Citric acid	av.oz. 3¼
Tartaric acid	av.oz. 5
Sodium bicarbonate	av.oz. 9½

The tartaric acid and sodium bicarbonate should be well dried and finely powdered before use; the citric acid should be used in the form of uneffloresced crystals. Powder the citric acid and mix it intimately with the lithium citrate and tartaric acid and then thoroughly incorporate the sodium bicarbonate. Place the mixed powders on a plate of glass or in a suitable dish, in an

oven heated to between 93 and 104 deg. C. When the mixture, by the aid of careful manipulation with a wooden spatula, has acquired a moist consistence, rub it through a No. 6 tinned-iron sieve, and dry the granules at a temperature not exceeding 54 deg. C.—U. S. P.

Keep the product in well-stoppered bottles.

This is entirely different from the preparation of the U. S. P. 1890, which was made by triturating $5\frac{1}{4}$ av.ounces of citric acid with 3 av.ounces of powdered sugar, drying the mixture thoroughly, incorporating with this 1 av.ounce of lithium carbonate and 4 av.ounces of sodium bicarbonate and another ounce of sugar.

The product may be granulated if desired by either the heat or alcohol process, as described under Salts, Effervescent.

The preparation of the Brit. Pharm. is made from $1\frac{1}{4}$ av.ounces of lithium citrate, 5 av.ounces of citric acid, $7\frac{3}{4}$ av.ounces of tartaric acid and $14\frac{1}{2}$ av.ounces of sodium bicarbonate. This mixture is to be granulated by means of heat like that of the present U. S. P.

Salt, Effervescent, of Iron Pyrophosphate.

See Salt, Effervescent, of Iron Citrate.

Salt, Effervescent (Artificial) Kissingen.

Artificial Kissingen salt.av.oz. 7

Saccharated sodium bicarbonateav.oz. 9

Saccharated tartaric acid....av.oz. 9

Mix the ingredients, previously well dried, and triturate them until a uniform powder is obtained.

If desired in the granular form, follow the general formula by substituting saccharated citric acid, not dried, for one-half the saccharated tartaric acid, heating, etc., according to the general formula.—N. F.

A solution of about 80 gr. of this preparation in 6 fluidounces of distilled water represents an equal volume of

Kissingen water (Rackoczi springs) in its essential constituents.

Salt, Effervescent, of Lithium Carbonate.

Lithium carbonateav.oz. 2

Sodium bicarbonateav.oz. 6

Tartaric acidav.oz. 4

Sugarav.oz. 8

Alcoholfl.oz. 9

Mix the solids, and moisten and sift in the regulation manner. Dry first at 20 deg. C., then increase the temperature to 40 deg. C., until perfectly dry.—D.

Salt, Effervescent, of Magnesium Citrate.

Magnesium carbonate, powderav.oz. $2\frac{1}{2}$

Citric acidav.oz. $11\frac{1}{2}$

Sodium bicarbonateav.oz. $8\frac{1}{2}$

Sugarav.oz. 2

Alcohol, water, each.....sufficient

Mix the magnesium carbonate with $7\frac{1}{2}$ av.ounces of citric acid and 1 fluid-ounce of water so as to form a thick paste. Dry this at a temperature not exceeding 30 deg. C. and reduce to fine powder. Then mix this intimately with the sugar, sodium bicarbonate and the remainder of the citric acid, dampen with alcohol, and granulate as described under Salts, Effervescent.—N. F. Appendix, U. S. P. 1890 and Germ. Pharm.

This preparation may also be granulated by the heat process.

The commercial brands of "effervescent citrate of magnesia" contain little or no magnesium citrate, but are composed mainly of magnesium or sodium sulfate. Such a preparation is designated "English style" to distinguish it from the true citrate. The U. S. P. recognizes effervescent magnesium sulfate. See also Salt, Effervescent, of Sodium Sulfate; also Salt, Effervescent, of Sodium Citro-Tartrate. for a suitable substitute for magnesium citrate.

Salt, Effervescent, of Magnesium Sulfate.

Magnesium sulfateav.oz. 20

Sodium bicarbonateav.oz. 16

Tartaric acidav.oz. $8\frac{1}{2}$

Citric acidav.oz. $5\frac{1}{2}$

The sodium bicarbonate and tartaric acid should be dried and rubbed to fine

powder, the citric acid and salt should be used in the form of uneffloresced crystals. Dry the magnesium sulfate on a water bath until it ceases to lose weight, then after powdering the dry salt, mix it intimately with the citric acid, which has previously been powdered, and the tartaric acid and thoroughly incorporate the sodium bicarbonate. Place the mixed powders on a plate of glass or in a suitable dish, in an oven heated to between 93 and 104 deg. C. When the mixture has acquired a moist consistence by the aid of careful manipulation with a wooden spatula, rub it through a No. 6 tinned-iron sieve and dry the granules at a temperature not exceeding 54 deg. C.

Keep the product in well-stoppered bottles.—U. S. P.

II.

Magnesium sulfate, crystal.	av.oz. 25
Sodium bicarbonateav.oz. 18
Tartaric acidav.oz. 9½
Citric acidav.oz. 6¼
Sugarav.oz. 5¼

Dry the magnesium salt at a temperature of about 55 deg. C., until it has lost nearly one-fourth (23 per cent.) of its weight; powder the product, and mix with the sugar and other ingredients, all in fine powder. Then granulate the mixture by the heat method, then dry granules at a temperature not exceeding 55 deg. C.—Brit. Pharm.

Salt, Effervescent, of Pepsin.

Pepsin, pure, powdergr. 150
Citric acidav.oz. 5¾
Tartaric acidav.oz. 5
Sodium bicarbonateav.oz. 12¼
Sugargr. 720

Make by the U. S. P. process, or it may be prepared by either of the N. F. processes.

Salt, Effervescent, of Pepsin and Bismuth.

Pepsin, pure, powdergr. 150
Bismuth and ammonium citrategr. 150
Citric acidav.oz. 5¾
Tartaric acidav.oz. 4½
Sodium bicarbonateav.oz. 12¼
Sugargr. 720

Prepare like the preceding.

Salt, Effervescent, of Phenacetine with Caffeine. (Effervescent Phenacetine with Caffeine.)

Phenacetinegr. 275
Caffeine citrategr. 138
Sugarav.oz. 2 gr. 30
Citric acidav.oz. 2
Tartaric acidav.oz. 3
Sodium bicarbonateav.oz. 5¾

Use all in powder, mix the phenacetine, caffeine citrate and two acids, and incorporate with the sodium bicarbonate and sugar previously mixed. Place the mixture in an enameled-iron dish and apply a heat sufficient to cause the mixture to assume a granular form, and then separate into granules of convenient size by means of a suitable sieve. Dry the granules at a temperature not exceeding 120 deg. F.—Brit. Form.

Each heaping teaspoonful contains about 5 grains of phenacetine and 2½ of caffeine citrate.

Artificial Vichy saltav.oz. 4
Lithium citrate, very fine powdergr. 630
Saccharated sodium bicarbonateav.oz. 10
Saccharated tartaric acidav.oz. 10

Mix the ingredients, previously well dried, and triturate them until a uniform powder is obtained.

If desired in the granular form, follow the general formula by substituting saccharated citric acid, not dried, for one-half the saccharated tartaric acid, heating, etc., according to the general formula.—N. F.

Ninety grains (or about a heaped teaspoonful) of this preparation represent 14 gr. of artificial Vichy salt, and 5 gr. of lithium citrate.

Salt, Health. (Sundheds Salt.)

This is a formula which is used for this Scandinavian preparation:

Sodium bicarbonateparts 14
Magnesium carbonatepart 1
Oil-sugar of peppermintpart 1

Salt, Kissingen, Artificial. (Sal Kissingsense Factitium.)

Potassium chloridgr. 42
Magnesium sulfate, anhydrous (dried)gr. 145
Sodium bicarbonategr. 265
Sodium chloridav.oz. 2

Triturate the ingredients, previously well dried, to a fine, uniform powder.—N. F.

A solution of about 24 gr. of this preparation, in 6 fluidounces of distilled water, represents an equal volume of Kissingen water (Rakoczi spring) in its essential constituents.

Salt, Vichy, Artificial. (Sal Vichyanum Factitium.)

Potassium carbonatepart 1

Salt, Effervescent, of Potassium Bromid.

Potassium bromid, very fine powderav.oz. 3

Saccharated sodium bicarbonateav.oz. 12

Saccharated tartaric acid.....av.oz. 12

Mix the ingredients, previously well dried, and triturate them until a uniform powder is obtained.

If desired in the granular form, follow the general formula by substituting saccharated citric acid, not dried, for one-half the saccharated tartaric acid, heating, etc., according to the general formula.—N. F.

Ninety grains (or about a heaped teaspoonful) of this preparation represent about 10 gr. of potassium bromid.

Salt, Effervescent, of Potassium Bromid with Caffeine.

Prepare this like the preceding, adding 131 gr. of caffeine (alkaloid) to the above mixture.—N. F.

Ninety grains (about a heaped teaspoonful) represent about 10 gr. of potassium bromid and 1 gr. of caffeine.

Salt, Effervescent, of Potassium Citrate.

Potassium citrateav.oz. 8

Citric acidav.oz. 6½

Tartaric acidav.oz. 10

Sodium bicarbonateav.oz. 19

The sodium bicarbonate and tartaric acid should be dried and rubbed to fine powder before use, the citric acid should be used in the form of uneffloresced crystals. Dry the potassium citrate on a water bath until it ceases to lose weight, then powder the salt, mix it intimately with the powdered citric acid

and the tartaric acid, and then thoroughly incorporate the sodium bicarbonate. Place the mixed powders on a plate of glass or in a suitable dish in an oven heated to between 93 and 104 deg. C. When the mixture, by the aid of careful manipulation with a wooden spatula, has acquired a moist consistence, rub it through a No. 6 tinned-iron sieve, and dry the granules at a temperature not exceeding 54 deg. C.—U. S. P.

Keep the product in well-stoppered bottles.

Salt, Effervescent, of Sodium Citro-Tartrate.

Sodium bicarbonateav.oz. 8½

Tartaric acidav.oz. 4½

Citric acidav.oz. 3

Sugarav.oz. 2½

Prepare according to the general formula. The mixture is to be heated to a temperature of between 95 and 105 deg. C. and dried at a temperature not exceeding 55 deg. C.—Brit. Pharm.

Salt, Effervescent, of Sodium Phosphate.

I. By the U. S. P. process, this is prepared exactly like effervescent salt of potassium citrate, using 8 av.ounces of exsiccated sodium phosphate in fine powder in place of the potassium citrate.

II.

Sodium phosphate, crystal.....av.oz. 12½

Sodium bicarbonateav.oz. 12½

Tartaric acidav.oz. 6¾

Citric acidav.oz. 4½

Dry the sodium phosphate until it has lost 60 per cent. of its weight, then powder, add the other ingredients, and complete the process as according to the preceding formula.—Brit. Pharm.

The preparations of the market contain sugar, while the above do not. A saccharine preparation may be made from 4¾ av.ounces of dried sodium phosphate and 15½ av.ounces each of saccharated sodium bicarbonate and saccharated tartaric acid, and granulate with alcohol. Or substitute saccharated citric acid for one-half the tartaric acid and granulate by the heat method.

Salt, Effervescent, of Sodium Sulfate.

Sodium sulfate, clear crystals	av.oz. 12½
Sodium bicarbonate	av.oz. 12½
Tartaric acid	av.oz. 6¾
Citric acid	av.oz. 4½

Dry the sodium sulfate until it has lost rather more than one-half (56 per cent.) of its weight, then add the other ingredients, and prepare the salt according to the preceding formula.—Brit. Pharm.

Salt, Effervescent (Artificial), Vichy.

Artificial Vichy salt.....	av.oz. 6
Saccharated sodium bicarbonate	av.oz. 9½
Saccharated tartaric acid...	av.oz. 9½

Mix the ingredients, previously well dried, and triturate them until a uniform powder is obtained.

If desired in the granular form, follow the general formula by substituting saccharated citric acid, not dried, for one-half the saccharated tartaric acid, heating, etc., according to the general formula.—N. F.

A solution of about 57 gr. of this preparation in 6 fluidounces of water represents an equal volume of Vichy water (Grande Grille spring) in its essential constituents.

Salt, Effervescent (Artificial), Vichy, with Lithium.

Magnesium sulfate, anhydrous (dried)	part 1
Sodium chlorid	parts 2
Sodium bicarbonate	parts 22

Triturate the ingredients, previously well dried, to a fine, uniform powder.—N. F.

A solution of about 14 gr. of this preparation, in 6 fluidounces of distilled water, represents an equal volume of Vichy (Grande Grille spring) in its essential constituents.

Salts, Volatile.

Thomsonian (from the Guide and the Materia Medica):

Crude sal ammoniac.....	oz. 1
Pearlash	oz. 2

Reduce each by itself and then mix.

This is therefore a crude form of

ammonium carbonate. It was used for inhalation for headaches and was also therefore a crude form of our present "smelling salts."

Salve Mulls.

See Mulls, Plaster and Salve.

Silica. (Silicea.)

The process of Hahnemann is now superseded by the following better process of the British Homeopathic Pharmacopoeia:

Silica, powder	part 1
Sodium carbonate, pure, dried	parts 4

Fuse the carbonate in a capacious clay crucible, then gradually add the silica. When the evolution of gas ceases, pour the fused mass upon a clean marble slab. While still warm, pulverize it in a mortar; put into a wide-mouthed bottle with enough distilled water to dissolve it; stopper the bottle and cap with wet bladder. The next day dilute the solution somewhat and filter through absorbent cotton. Add to the filtered liquid, from time to time, small quantities of pure hydrochloric acid. The hydrated silica will be thrown down as a bulky, gelatinous, white precipitate. Collect this and wash on a strainer with distilled water until the washings are tasteless and show only a faint cloudiness when mixed with solution of silver nitrate. Finally dry upon a porcelain water bath.

This makes a pure silica suitable for homeopathic use. It is used in the form of a trituration. See Triturations, Homeopathic.

Silk Ligature, Carbolated.**I. Lister's process:**

White wax	gr. 45
Carbolic acid, crystal.....	av.oz. 1
Silk thread, strong (not dyed)	sufficient

Mix the acid and wax by fusion, place into the mixture as much of the thread as may be desired and allow it to remain until the mixture is cold. Then wipe off the excess of liquid from the thread by means of a cloth, and then

preserve the medicated fiber in a mixture of

Carbolic acid, crystal.....gr.	50
Glycerinfl.dr.	6
Alcoholfl.dr.	10

—D.

II. Czerny's process:

Boil strong or thick silk thread (uncolored) in 5 per cent. carbolic acid water, for from 10 minutes to 1½ hours, according to the thickness of the thread. At the end of every half hour of boiling the carbolized water should be renewed. The thread should be preserved in 2 per cent. carbolic acid water.—D.

Silk Ligature, Iodoform.

Partsch's process:

Wind strong silk thread (uncolored) upon a glass spool, or other similar suitable object, and macerate for 2 days in a 10 per cent. solution of iodoform in stronger ether (1 dr. iodoform in 13 fluid-drams of stronger ether). Then dry the thread by exposing for a moment to the atmosphere, and preserve in well-closed glass bottles or jars.—D.

Silk Ligature, Mercuric Chlorid. (Sublimated Silk Ligature.)

I.

Macerate strong uncolored silk thread for 24 hours in a 1 per cent. solution of mercuric chlorid in distilled water, then preserve in a solution of

Mercuric chloridgr.	1
Glycerinfl.dr.	3
Alcoholfl.oz.	4¾

—D.

II. Schede-Kuemmell's process:

Boil strong uncolored silk for 2 hours in a 1 per cent. aqueous solution of mercuric chlorid, and preserve in a one-tenth aqueous solution of the same agent.—D.

Silk Protective, Carbolated. (Carbolated Protective Oiled Silk.)

Dextrinav.oz.	½
Starchav.oz.	1
Distilled waterfl.oz.	7½
Carbolic acid, crystal.....av.oz.	½

Heat the starch and dextrin with the water until the starch granules are broken up, allow to cool, incorporate the

acid, and paint this liquid with a broad soft brush on silk protective (which is commercially available).—D.

Snuff, Catarrh. (Anticatarrrhal Powder — Catarrh Powder — Pulvis Sternutatorius — Anticatarrrhalis — Ferrier's Snuff — Compound Powder of Bismuth.)

Morphine hydrochloridgr.	1
Acacia, fine powder.....gr.	60
Bismuth subnitrategr.	180

Mix them intimately by trituration.—N. F.

This snuff was devised by Dr. Ferrier in 1876.

Snuff, Menthol. (Mentholin.)

Mentholgr.	45
Boric acidgr.	90
Sugarav.oz.	½
Sugar of milkav.oz.	1
Coffee, roastedav.oz.	1½

All should be in fine powder and be well mixed.—H.

Snuff, Schneeberger. (Pulvis Sternutatorius Albus.)

Various formulas have been used for making this preparation, the following being the most acceptable:

I.

Orris rootav.oz.	1
Bayberry barkav.oz.	1
White helleboreav.oz.	2
Starchav.oz.	12
Oil of clove.....drops	20

The first four ingredients should be in the finest powder and the whole should be well mixed.

II.

White helleboreav.oz.	¾
Canada snake root.....av.oz.	1
Orris rootav.oz.	1½
Rice powderav.oz.	5
Oil of bergamot.....drops	30

The first four ingredients should be in fine powder and all should be well mixed.—H.

III.

Canada snake root.....av.oz.	1
White helleboreav.oz.	1
Orris rootav.oz.	3
Starchav.oz.	5
Oleobalsamic mixturedrops	75

The first four ingredients should be in fine powder and all should be well mixed.—H. modified.

Soap, Castile, White. (Soap or Sapo, U. S. P.—Hard Soap or Sapo Durs, Brit. Pharm.—Sapo Oleinicus or Oleaceus—Oel Seife.)

This is described by the U. S. P. as soap prepared from sodium hydrate and olive oil. The Brit. Pharm. describes it as soap made with sodium hydrate and olive oil, and containing about 30 per cent. of water. The U. S. P. permits 36 per cent. of water.

The nearest approach to the above in the Germ. Pharm. is the so-called "medicinal soap." See Soap, Medicinal.

Soap, Curd. (Tallow or Animal Soap—Sapo Animalis.)

According to the Brit. Pharm., in which this soap is largely used in preparations, this is soap made with sodium hydrate and a purified animal fat consisting principally of stearin (viz., tallow), and containing about 30 per cent. of water.

Soap, Fat. (Sapo Unguinus—Mollin.)

Potassa (caustic potash, pure)	av.oz. 1½
Lard	av.oz. 8
Alcohol	fl.dr. 7½
Glycerin	av.oz. 3
Water	sufficient

Dissolve the potassa in enough water to make 6½ fluidounces, heat the solution, add the lard, stir well during one-half hour, add the alcohol, and maintain a temperature of 50 to 60 deg. C. for 12 hours; then incorporate the glycerin.—Germ. Form. modified.

Soap, Surgical. (Surgeon's Liquid Soap or Solution of Soap.)

Improvements have been made in soaps or saponaceous liquids for sterilizing the field of operations as well as the hands of the surgeon and his assistants. These mixtures may also be used for cleansing the hands at any time, being excellent to remove odors. Addition of alcohol or ether to such mixtures not only aids the detergent action of the soap but carries it more deeply into the pores of the skin.

The following are good formulas:

I.

Oleic acid	fl.oz. 5¾
Potassa (pure caustic potash),	
Distilled water, each	sufficient
Alcohol	fl.oz. 2½
Stronger ether, to make	fl.oz. 16

Dissolve 570 grains of the potassa in enough distilled water to make 10 fluidrams. Mix the oleic acid with the alcohol in a flask and drop in the potassa solution gradually (about 9 fluidrams being required), agitating occasionally until a neutral soap solution is obtained, using phenolphthalein as indicator. Then add 10 minims more of the potassa solution so that the liquid is just alkaline. Allow the liquid to cool, and add the ether. Set aside for some time, if desired, and decant the liquid from the slight precipitate which usually forms.

The mixture may be flavored with 15 to 40 minims of oil of lavender flowers or about 75 minims of terebene.

The product contains approximately 40 per cent. each of potassium oleate and ether, 16 of alcohol and 4 of water.

II. A mixture of equal parts of tincture of green soap and ether may be used for the same purpose.

III.

Green (soft) soap	av.oz. 6
Water	fl.oz. 2
Glycerin	fl.oz. 2
Alcohol	fl.oz. 2
Oil of rose geranium, winter-green, bergamot, or peppermint	sufficient to flavor

The oil should be dissolved in the alcohol before adding to the other ingredients.

Soap, Green or Soft. (Sapo Mollis, U. S. P. 1900—Sapo Viridis, U. S. P. 1880—Sapo Kalinus, Germ. Pharm.—Potassa Soap—Kali or Schmier Seife.)

I.

Linseed oil, raw	av.oz. 8½
Potassium hydroxid (caustic potash)	av.oz. 2
Alcohol	fl.dr. 6½
Water	fl.oz. 9

Heat the oil in a deep, capacious vessel on a water or steam bath to a temperature of about 70 deg. C. Also dissolve the potassa in the water, warm the

solution to about 70 deg. C., add to this the warm oil, and mix thoroughly. Then incorporate the alcohol and continue the heat (without stirring) until a small portion of the mixture is found to be soluble in boiling water without the separation of oily drops. Now allow the mixture to cool and transfer into suitable vessels.—U. S. P.

The potassium hydroxid used in this process should be of the strength designated by the U. S. P., viz., 85 per cent. Potassa of any other strength, however, may be used if a proportionately larger or smaller quantity be taken.

II. The following process was recommended by the A. Ph. A. committee several years ago:

Olive oilfl.oz. 16
Potassaav.oz. 6
Watersufficient

Dissolve 5 av.ounces of potassa in 32 fluidounces of water, and add 8 fluidounces of this solution to the oil contained in a suitable vessel, place this over a moderate fire, stirring until the mixture has thickened sufficiently. Gradually add the remaining solution of potassa and continue the heat with occasional stirring until the mixture assumes a gelatinous condition. Dissolve the remaining 1 av.ounce of potassa in 16 fluidounces of water, add this to the gelatinous mass, and evaporate the whole to proper consistency.

Soft soap may be prepared from other fixed oils, such as cottonseed oil, but linseed oil and pure olive oil are usually preferred. Linseed oil makes a brown soap, olive oil a pale yellow.

III.

Linseed oilav.oz. 10
Potassaav.oz. 2
Alcoholfl.dr. 9¼
Watersufficient

Dissolve the potassa in enough water to make 11½ fluidounces of solution. Warm the oil in a porcelain capsule and to it gradually add the alkaline liquid previously mixed with the alcohol. Heat the mixture on a water bath until saponification is completed.—Germ. Pharm.

Soap, Jalap. (Sapo Jalapinus—Mass of Jalap Resin.)

Resin of jalap, fine powder,
Medicinal soap
.....equal parts of each by weight
Mix thoroughly.—Germ. Pharm.

The preparation of the former Germ. Pharm. was as follows:

Resin of jalap.....av.oz. 1
Medicinal soapav.oz. 1
Alcoholfl.dr. 14
Waterfl.dr. 4

Dissolve the mixed resin and soap in the mixed alcohol and water on a water bath, and then evaporate with constant stirring to a weight of 2¾ av.ounces.

Soap, Medicinal. (Sapo Medicatus or Medicinalis.)

Lardav.oz. 4
Olive oilav.oz. 4
Caustic sodagr. 630
Saltav.oz. 2
Sodium carbonategr. 105
Alcoholfl.dr. 9
Watersufficient

Dissolve the soda in 9 fluidounces of water, heat the solution on a water bath, add to it gradually the lard and oil previously melted together, and then continue heating for another half hour, frequently agitating. Now add the alcohol and when the mass has become homogeneous, gradually add 15½ fluidounces of water. Heat again, adding, if necessary, from time to time, small quantities of solution of soda made as before (70 grains of caustic soda in 1 fluidounce of water), until a transparent soap is obtained which is soluble in hot water without separation of fat. To this mass add a filtered solution of the salt and sodium carbonate in 6½ fluidounces of water and heat the whole with constant stirring until the soap has separated completely from the liquid. Allow to cool, remove the soap from the liquid, wash it with a small amount of water, then express it carefully yet completely, cut the soap into pieces and dry in a warm place. Powder before using.—Germ. Pharm.

The caustic soda should be the purified variety containing 90 per cent. of sodium hydrate.

Soda with Lime. (London Paste—Soda Cum Calce.)

Caustic soda, lime, each. .equal parts

Reduce them to powder in a clean iron mortar, previously warmed, and mix them intimately.

Keep the powder in small, well-stoppered vials.

Sodium Arsenate, Exsiccated.

Take any convenient quantity of sodium arsenate in crystals, break the latter up into small fragments, and allow these to effloresce at a temperature between 40 and 50 deg. C. until they are completely disintegrated; then gradually increase the temperature to 150 deg. C. and continue the drying until the product ceases to lose weight. Reduce it to fine powder and transfer it to dry, well-stoppered bottles.—U. S. P.

Sodium Boro-Benzoate.

Sodium borate, fine powder. .parts 3

Sodium benzoateparts 4

Mix intimately.

Sodium Carbonate, Dried or Exsiccated. (Natrium Carbonicum Siccum.)

Sodium carbonate, c. p., clear crystalsav.oz. 16

Break the crystals into small fragments, allow them to effloresce for several days in warm air, at a temperature not exceeding 25 deg. C., until they are completely disintegrated, then dry the white powder at a temperature of about 45 deg. C. until its weight is reduced to 8 av.ounces. Pass the powder through a rather fine sieve, and preserve in well-stoppered bottles.—N. F. Appendix, U. S. P. 1890 and Germ. Pharm.

According to the Brit. Pharm., sodium carbonate is to be dried until it has lost nearly 63 per cent. of its weight.

Sodium Phosphate, Dried or Exsiccated.

Take any convenient quantity of sodium phosphate in crystals, allow it to effloresce for several days in warm air at a temperature of from 25 to 30 deg. C., then continue the drying in an oven. Raise the temperature very gradually

up to 100 deg. C. and maintain this temperature until the salt ceases to lose weight. Powder and sift the residue, and preserve it in well-stoppered bottles.—U. S. P.

Sodium phosphate in clear crystals contains 60 per cent. of water of crystallization, therefore the dried salt is $2\frac{1}{2}$ times as strong as the crystals.

Sodium Sulfate, Dried or Exsiccated. (Natrium Sulfuricum Siccum.)

Prepare like dried sodium carbonate. See Sodium Carbonate, Dried.

—Germ. Pharm.

Solutions. (Liquores.)

The solutions differ from the other pharmaceutical preparations in being as a rule of inorganic origin. The solvent is generally water.

For remarks on homeopathic solutions, see Solutions, Homeopathic.

Solution of Acetic Acid.

Glacial acidav.oz. 1

Distilled water.fl.oz. 8. fl.dr. 5

—Homeopathic.

This is a 1x solution. Dilutions are made with distilled water, to be freshly made, for immediate use only. See Dilutions, Homeopathic.

Solution of Albuminate of Iron.

See Solution of Iron Albuminate.

Solution of Aloes and Soda, Mettauer's. (Mettauer's Laxative Aperient.)

Socotrine aloesgr. 300

Sodium bicarbonateav.oz. $1\frac{1}{2}$

Comp. tinct. of lavender. . .fl.dr. 6

Waterfl.oz. 16

Macerate for 2 weeks, agitating occasionally, and filter.

Solution of Aluminum Acetate. (Burrow's Solution.)

Aluminum sulfate, crystallizedav.oz. 5

Acetic acid, 36 per cent. . .av.oz. 5

Calcium carbonate (precipitated chalk)av.oz. 2

Waterfl.oz. $14\frac{1}{2}$

Dissolve the calcium carbonate in the acid mixed with $3\frac{1}{2}$ fluidounces of water, and the aluminum sulfate in 11 fluidounces. Mix the two solutions, and

allow the mixture to stand for 24 hours, agitating occasionally. Then pour off the clear solution and filter.—N. F. and Germ. Pharm.

The directions of the Germ. Pharm. differ from the above only in directing the precipitated calcium sulfate to be expressed, without subsequent washing, in a thick linen cloth, and filtering the colature.

The solution contains from 7.5 to 8 per cent. of basic aluminum acetate.

II. Burow's formula:

Aluminum sulfate, pure.....av.oz.	3
Lead acetate, pure, clear crystals	av.oz. 5
Distilled water	sufficient

Dissolve the aluminum salt in 24 fluidounces of water and the lead acetate in 14½ fluidounces of water. Cool both solutions to 100 deg. C., then pour the lead solution gradually into the aluminum solution, stirring constantly meanwhile, and set aside in a cool place for 3 or 4 days, then filter.—D.

III. The formula given under Solution of Aluminum and Sodium Acetates is also largely employed instead of either of the above.

Solution of Aluminum Acetico-Tartrate.

Alum (U. S. P. or aluminum and potassium sulfate).....av.oz.	15
Sodium carbonate, pure, crystal	av.oz. 14
Glacial acetic acid (U. S. P.)	av.oz. 3
Tartaric acid	av.oz. 2. gr. 300
Water, to make.....av.oz.	20

Dissolve the alum and the sodium carbonate each in 200 fluidounces of water, mix the solutions, and wash the precipitate with water, first by decantation, and afterwards on a strainer, until the washings run off tasteless. Allow the precipitate to drain and to shrink in volume by exposure on the strainer. Then transfer it to a tared capsule, add the two acids, and apply heat until solution has been effected. Finally evaporate the liquid to a weight of 20 av. ounces.

The product contains about 50 per

cent. of dry, so-called aluminum acetico-tartrate.

The dry salt may be obtained by evaporating the solution.—N. F.

Solution of Aluminum and Sodium Acetate. (Burow's Solution.)

Lead acetate, pure.....av.oz.	3
Alum	av.oz. 2
Sodium sulfate	gr. 160
Distilled water	fl.oz. 24

Dissolve the lead acetate in 9 fluidounces of distilled water which has previously been boiled and cooled.

Dissolve the alum and sodium sulfate in 15 fluidounces of water, add the first solution to it, shake well, allow to stand for 24 hours, decant the clear supernatant liquid, and filter.—Cinc. Acad. Pharm.

This formula is frequently slightly varied as follows:

Lead acetate, pure	av.oz. 4
Potassa alum	av.oz. 2½
Sodium sulfate, pure, crystal	av.oz. ¼
Distilled water	fl.oz. 32

Dissolve the alum and sodium salt in one-half the water, the lead acetate in the other half, filter the solutions, if necessary, mix them, allow the precipitate to subside, and use the clear liquid.

Solution of Ammonium Acetate. (Spirit of Mindererus.)

I.

Ammonium carbonate	gr. 184
Diluted acetic acid.....	fl.oz. 8

Add the ammonium carbonate gradually to the acid, and stir until dissolved.

The acid should be as cool as possible, and it should be of the full strength specified by the U. S. P., viz., 6 p. c. of absolute acid. It should also be pure, as should be the ammonium carbonate. The latter should be from hard, translucent pieces, free from any white, pulverulent bicarbonate.

This preparation should be freshly made as wanted for use.—U. S. P.

The product is an aqueous solution of ammonium acetate, containing about 7 per cent. of the salt, together with small amounts of acetic and carbonic acids.

The product is, however, unnecessary

ly acid, and is much more so than the same preparation of the U. S. P. 1880. 220 grains of ammonium carbonate would be a better proportion than 180 grains. See also No. II.

II.

Add sufficient ammonium carbonate gradually to diluted acetic acid until the latter is neutralized.

The alternative process of the U. S. P. 1880 is the most convenient and is probably the one mostly largely used. It is as follows, modified to practical form:

Dissolve 420 grains of ammonium carbonate in enough distilled water to make 8 fluidounces and filter, also make a mixture of $2\frac{1}{2}$ fluidounces of 36 p. c. acetic acid and $5\frac{1}{2}$ fluidounces of distilled water. Keep the liquids in separate, well-stoppered bottles, and when the solution is wanted, mix them in equal volumes.—U. S. P. 1880.

The above proportions are correct as determined by weight and measure.

III.

Ammonium carbonate, pure,
clear piecesgr. 365
Acetic acid, distilled water,
eachsufficient

Dissolve the carbonate in 10 times its weight of distilled water, neutralize with acetic acid, and add enough distilled water to make 16 fluidounces.—Brit. Pharm.

The Brit. Pharm. directs that the solution be preserved in a green glass bottle.

IV.

Ammonia water, 10 p. c.f.oz. $5\frac{1}{4}$
Acetic acid, 36 p. c.f.oz. 5
Distilled waterf.oz. 1

Mix in a porcelain capsule, and boil for several minutes. When the liquid has become cold, neutralize with ammonia water, filter, and add sufficient water to bring the liquid to a sp. gr. of 1.032 to 1.034.—Germ. Pharm.

V.

Solution of ammonium acetate, U. S. P.f.oz. 1
Distilled waterf.oz. 6

This is called a 2x solution.—Homeopathic.

Solution of Ammonia Acetate and Morphine.

Solution of ammonium acetate, U. S. P.f.dr. 1
Morphine acetategr. 8
Syrup of lemon, to make...f.oz. 1
—Eclectic.

Solution of Ammonium Acetate, Concentrated.

Acetic acid, 36 p. c.f.oz. 8

Ammonium carbonate, water,
each, to make.....f.oz. 16

Neutralize the acetic acid with a sufficient quantity of ammonium carbonate, carefully avoiding an excess. Then add enough water to make the product measure 16 fluidounces.

The product is of about 3 times the strength of the official solution.

It is not recommended to keep this solution on hand for the preparation of the official solution, as this is preferably made freshly when wanted for use. When it is, however, required, or deemed of advantage, to dispense the concentrated solution, it is suggested that it be diluted with carbonic acid water ("soda water"), or be directed to be diluted with this at the time of administration.
—N. F.

Solution of Ammonia, Anisated.

Oil of anise.....f.dr. 1
Alcoholf.oz. $3\frac{1}{2}$
Ammonia water, 10 p. c.f.dr. $5\frac{1}{4}$
—Germ. and Austr. Pharms.

Solution of Ammonium Benzoate.

Such a preparation may be made as follows:

Ammonium carbonategr. 500
Benzoic acidgr. 1165
Distilled water, to make..f.oz. 16

Reduce the ammonium salt to powder, mix it and the acid in a capacious vessel, add the water, stir frequently until effervescence has ceased and solution is complete, and filter.

Each fluidram contains 10 gr. of ammonium benzoate.

Solution of Ammonium Citrate.

Ammonium carbonate.....
.....gr. 640 or sufficient
Citric acidgr. 912
Distilled watersufficient

Dissolve the acid in 5 times its weight of distilled water (10 fluidounces), neutralize with ammonium carbonate, and add enough distilled water to make 16 fluidounces.—Brit. Pharm.

This solution should be preserved in green glass bottles.

Solution of Ammonium Citrate, Stronger.

Citric acidav.oz. $9\frac{1}{4}$
Stronger water of ammonia
(U. S. P. or 28 p. c.), wa-
ter, each, to make.....fl.oz. 16

Neutralize the acid with the stronger water of ammonia, and add enough water to make 16 fluidounces.

Two fluidounces of the solution may be made if desired from 510 gr. of citric acid and corresponding quantities of the other ingredients.

The solution should be kept in bottles free from lead.

Each fluidram contains about 40 gr. of ammonium citrate.

This solution is apt to take up notable quantities of lead, if kept in bottles made of flint glass.—N. F.

The N. F. states that solution of ammonium citrate, Brit. Pharm., may be prepared from this by mixing 1 volume with 4 of water. This is an error; it should be 1 volume with $3\frac{1}{2}$ of water.

Solution of Ammonium Succinate.

Succinic acidav.oz. 1
Distilled water, empyreumat-
ic ammonium carbonate,
eachsufficient

Dissolve the acid in 8 fluidounces of warm water, neutralize with the carbonate, set aside in a cool place for 24 hours, occasionally agitating, filter, and add enough distilled water to make 10 av.ounces.—Dan. and Norw. Pharms.

The empyreumatic ammonium carbonate (ammonii carbonate pyroleosus) is made by mixing 3 parts by weight with 97 of ammonium carbonate, and triturating together until reduced to powder and mixed intimately.

Solution of Ammonium Valerianate.

Ammonium valerianate.....gr. 240
Borax, powdergr. 384

Ammonia watersufficient
Distilled water, to make....fl.oz. 16

Mix the ammonium valerianate with 2 fluidounces of distilled water and add ammonia water, drop by drop, until a clear and slightly alkaline solution is produced; then add 4 fluidounces of water and the borax, stir the whole well, and when all or almost all has dissolved, add enough water to make 16 fluidounces, and filter.

This makes a tasteless and odorless preparation.

Solution for Anesthesia by Infiltration. (Schleich's.)

The Schleich method of local anesthesia by infiltration consists in the injection into the tissues of an aqueous solution of cocaine muriate, morphine muriate, and sodium chlorid. The formula most generally used is one composed of $\frac{1}{2}$ gr. of cocaine hydrochlorid, $\frac{1}{8}$ gr. of morphine hydrochlorid, and 1 gr. of sodium chlorid to 1 ounce of sterilized water. This can be made stronger or weaker by adding more or less of the cocaine. If it is desired to keep this solution for some time, a few drops of carbolic acid may be added. The following formulas are used for the tablets for making solutions Nos. 1, 2 and 3:

Formula No. 1.

Cocaine hydrochloridgr. 3
Morphine hydrochlorid.....gr. $\frac{1}{3}$
Sodium chloridgr. 3

Formula No. 2:

Cocaine hydrochloridgr. $1\frac{1}{2}$
Morphine hydrochlorid.....gr. $\frac{1}{3}$
Sodium chloridgr. 3

Formula No. 3:

Cocaine hydrochlorid.....gr. $\frac{1}{6}$
Morphine hydrochlorid.....gr. $\frac{1}{12}$
Sodium chloridgr. 3

Different syringes have been devised for injecting the fluid, one having a capacity of 2 or 3 drams being the most convenient. The needles should be of different lengths, and one or two of them curved. The ordinary hypodermic needle will answer the purpose in many cases.

Solution of Antimony Chlorid. (Liquid Butter of Antimony—Solution of Terchlorid of Antimony—Liquor Stibii Muriatici or Chlorati.)

Black sulfid of antimony,
pureav.oz. 6¾
Hydrochloric acidfl.oz. 32

Place the antimony compound in a porcelain or enameled-iron dish, add the acid, apply to the mixture at first a gentle heat which must be gradually increased, as the evolution of gas slackens, until the mixture boils. Continue boiling for 15 minutes, then remove the vessel from the fire, and filter the liquid through calico, returning that which passes through at first until a perfectly clear liquid is obtained. Concentrate this by evaporation to 16 fluidounces, and preserve in a glass-stoppered bottle.—Brit. Pharm. 1885.

The acid for the above may be the commercial variety, but should be of full strength, 32 per cent.

Owing to the fact that most of the "black antimony" of the market is very impure, great care should be exercised in the selection of a suitable article. This black antimony should be in fine powder. The boiling of the liquid should either be done under a good flue or in the open air, to avoid tainting the atmosphere of the room with the disagreeably odorous sulfuretted hydrogen gas.

The above preparation is substantially that of the first Germ. Pharm. (not recognized in later editions).

Solution, Antiseptic, Alkaline. ("Alkaline Antiseptic.")

Potassium bicarbonategr. 480
Sodium benzoategr. 480
Sodium borategr. 120
Thymolgr. 3
Eucalyptolm. 3
Oil of peppermintm. 6
Tincture of cudbearfl.dr. 4
Alcoholfl.oz. 2
Glycerinfl.oz. 8
Purified talcgr. 150
Distilled water, to make...fl.oz. 32

Dissolve the salts in 19 fluidounces, and the thymol, eucalyptol and oils in the alcohol. Mix the alcoholic solution with

the glycerin and the tincture, add the solution of the salts and enough water to make 32 fluidounces. Add the talc and shake occasionally during a few days, if convenient, then filter, returning the first portions until the filtrate passes brilliantly clear.—N. F.

Solution, Antiseptic, Lister's. (Lister's Antiseptic Fluid—Antiseptic Solution, U. S. P. and Cinc. Acad. Pharm.—Compound Solution of Thymol—Liquor Antisepticus.)

A number of formulas have been advocated for this preparation. Among the best known are the following:

I.

Boric acidgr. 145
Benzoic acidgr. 7
Thymolgr. 7
Eucalyptolm. 2 (or drops 3)
Oil of wintergr'n.m. 2 (or drops 3)
Oil of pepp'm't...m. 4 (or drops 6)
Oil of thyme.....m. 1 (or drops 2)
Alcoholfl.oz. 4
Purified talcgr. 150
Water, to make.....fl.oz. 16

Dissolve the boric acid in 11½ fluidounces of water and the benzoic acid in 2½ fluidounces of alcohol, and pour the aqueous solution into the alcoholic solution. Then dissolve in a mortar the thymol in the eucalyptol and oils, thoroughly incorporate the talc and add with constant trituration the solution first prepared. Allow the mixture to stand for 48 hours, agitating occasionally, filter, to the filtrate add 1½ fluidounces of alcohol and enough water to make 16 fluidounces.—U. S. P.

This formula mentions no wild indigo which is generally present in the solution.

II.

Benzoic acidgr. 128
Boric acidgr. 96
Sodium bicarbonategr. 64
Thymolgr. 24
Mentholgr. 16
Oil of wintergreendrops 20
Oil of eucalyptus.....drops 10
Tincture of wild indigo...f.dr. 1
Alcoholfl.oz. 6½
Distilled water, to make...fl.oz. 16

Dissolve the sodium bicarbonate and

boric acid in 5 fluidounces of water by the aid of heat. Dissolve the remaining ingredients in the alcohol. Add the first solution to the second and enough water to make 16 fluidounces, and filter if necessary.—Cinc. Acad. Pharm.

III.

Benzoic acid	gr. 64
Borax	gr. 64
Boric acid	gr. 128
Thymol	gr. 20
Oil of eucalyptus.....	drops 5
Oil of wintergreen.....	drops 5
Oil of peppermint.....	drops 3
Oil of thyme (white).....	drop 1
Fluid ext. of wild indigo.....	drops 20
Alcohol	fl.oz. 6
Distilled water	sufficient

Dissolve the two acids and borax by the aid of heat in 8 fluidounces of water, also dissolve the thymol and oils in the alcohol, mix the two solutions, agitating frequently during mixing, add the fluid extract, and then enough water to make 16 fluidounces; set aside for 24 hours, and filter through purified talcum.

IV.

Boric acid	gr. 128
Thymol	gr. 20
Eucalyptol	drops 5
Oil of wintergreen.....	drops 5
Oil of peppermint.....	drops 3
Oil of thyme, white.....	drop 1
Fluid extract of wild indigo.....	m. 30
Alcohol	fl.oz. 3
Distilled water, to make.....	fl.oz. 16

Dissolve the acid in some of the water, add the other ingredients to the alcohol, dissolve, mix the two solutions, add the remainder of the water, let stand for 24 hours, and filter through purified talcum.

V.

Boric acid	gr. 128
Thymol	gr. 16
Menthol	gr. 16
Oil of eucalyptus.....	drops 4
Oil of wintergreen.....	drops 4
Oil of horsemint.....	drops 4
Water	fl.oz. 12
Alcohol	fl.oz. 4
Caramel	drops 1 or 2

Dissolve the boric acid in the water and the other ingredients in the alcohol, mix the solutions, let stand for a day or two, shaking frequently, and filter.

Solution, Antiseptic, Seiler's.

Sodium bicarbonate	gr. 240
Sodium borate	gr. 240
Sodium benzoate	gr. 10
Sodium salicylate	gr. 10
Eucalyptol	m. 5
Thymol	gr. 5
Menthol	gr. 2½
Oil of wintergreen.....	drops 3
Glycerin	fl.oz. 4¼
Alcohol	fl.oz. 1
Distilled water, to make.....	pints 8

Dissolve the salt in 64 fluidounces of water by the aid of heat, also the eucalyptol, thymol, menthol, and oil in the alcohol, mix the two solutions, add the glycerin and the remainder of the water, allow to stand for 24 hours, and filter.

Solution, Antiseptic, Thiersch's.

This is the formula generally used for this solution:

Salicylic acid	gr. 15
Boric acid	gr. 90
Distilled water, recently boiled water	fl.oz. 16

**Solution, Antiseptic, Volkman's.
(Volkman's Antiseptic Liquid.)**

Thymol	gr. 60
Alcohol	fl.oz. 2
Glycerin	fl.oz. 2
Distilled water	fl.oz. 12

Dissolve the thymol in the alcohol, add the glycerin, and lastly the water.

Used as an antiseptic on wounds and dressings.

See also Solution, Germicide, which is a similar preparation.

Solution of Arsenic, Valangin's.

This may be extemporized as follows:

Solution of arsenous acid, U. S. P.	fl.oz. 1
Distilled water	fl.dr. 2¼

**Solution of Arsenicum Album. (So-
lution of Arsenous Oxid.)**

Arsenous acid, vitreous, pure, fine powder	gr. 73
Alcohol	fl.dr. 13
Distilled water, to make.....	fl.oz. 16

Add the acid to 13 fluidounces of distilled water contained in a flask, heat until the former is dissolved, filter, and add to the filtrate the alcohol and enough water to make 16 fluidounces.—

Homeopathic.

This is a 1x solution. Dilutions are made from this with dispensing alcohol. See Dilutions, Homeopathic.

Solution of Arsenous Acid. (Solution of Arsenic Chlorid, U. S. P. 1870—Hydrochloric Solution of Arsenic.)

Arsenous acidgr. 70
Diluted hydrochloric acid....gr. 350
Distilled water, to make...av.oz. 16

Mix the hydrochloric acid with 4 av. ounces of water in a tared porcelain dish, add the arsenous acid and boil the mixture until the latter is dissolved. Then add the remainder of the distilled water, and filter.—U. S. P.

The product contains 1 per cent. by weight of arsenic trioxid.

In the U. S. P. 1890, this preparation was made up to certain quantity by measure, viz., 73 gr. of arsenous acid, 6 fluidrams of diluted hydrochloric acid, and distilled water to make 16 fluidounces.

Only the pure arsenous acid should be used for making this preparation, not the ordinary commercial kind in powder form.

In the Brit. Pharm. this preparation is made from 73 grains of arsenous acid, 96 minims of hydrochloric acid, and enough water to make 16 fluidounces.

Solution of Arsenic and Gold Bromide.

See Solution of Gold and Arsenic Bromid.

Solution of Arsenic and Gold Iodid.

See Solution of Gold and Arsenic Iodid.

Solution of Arsenous and Mercuric Iodids. (Donovan's Solution.)

Arsenous iodidgr. 70
Red mercuric iodid.....gr. 70
Distilled water, to make...av.oz. 16

Rub the two iodids together in a mortar, add 2½ fluidounces of distilled water, and continue trituration until solution is effected. Filter the liquid and pass enough water through the filter to make the filtrate weigh 16 av.ounces.—U. S. P.

The product contains 1 per cent. each

by weight of arsenous and mercuric iodids.

In the U. S. P. 1890 and the Brit. Pharm., this preparation is made up to a certain quantity by measure, viz., 73 grains each of arsenous and mercuric iodids and enough water to make 16 fluidounces.

When this preparation becomes dark yellow or brown from liberated iodine, it may be decolorized by agitation with a small amount of metallic mercury or arsenic.

Solution of Atropine Sulfate.

Atropine sulfategr. 18
Salicylic acidgr. 2½
Distilled water, recently boiled and cooledfl.oz. 4

Dissolve the two solids in the water.

—Brit. Pharm.

One hundred and ten minims of solution contain 1 gr. of atropine sulfate.

Dose, ½ to 1 minim.

Solution of Bismuth. (Liquid Bismuth—Liquor Bismuthi—Solution of Bismuth and Ammonium Citrate.)

I.

Glycerite of bismuth.....fl.oz. 2
Alcoholfl.oz. 2
Distilled waterfl.oz. 12

Mix the glycerite of bismuth with the distilled water, then add the alcohol.

Solution of bismuth may also be prepared in the following manner:

Bismuth and ammonium citrategr. 128
Alcoholfl.oz. 2
Glycerinfl.oz. 1
Water of ammonia (U. S. P., or 10 p. c.), distilled water, each, to make....fl.oz. 16

Dissolve the bismuth and ammonium citrate in 12 fluidounces of distilled water, and allow the solution to stand a short time. Should any insoluble matter have deposited, pour off the clear liquid and add just enough water of ammonia to the residue to dissolve it, or to cause it to retain a faint odor of ammonia. Then filter the united liquids, add the alcohol, the glycerin, and enough distilled water to make 16 fluidounces.

This preparation should be freshly made when wanted for use.

Each fluidram contains 1 gr. of bismuth and ammonium citrate.—N. F.

II.

Bismuth subnitrategr. 512
 Potassium citrategr. 512
 Potassium carbonate, pure,
 drygr. 148
 Nitric acid, pure, 69 p. c. . . .fl.dr. 6½
 Ammonia water, 10 p. c.,
 Distilled water, each.sufficient

Dissolve the bismuth subnitrate in the nitric acid diluted with an equal volume of distilled water; add distilled water, constantly stirring, until the liquid is very faintly opalescent; add the potassium citrate and carbonate dissolved in a small amount of distilled water; heat the liquid to boiling, allow to cool; collect the precipitate; wash it with distilled water until free from nitrates; gradually add ammonia water to the moist precipitate until it is just dissolved, dilute with distilled water to make 16 fluidounces; finally filter.—Brit. Pharm.

Each fluidram contains an amount of bismuth equivalent to about 3 gr. of bismuth oxid.

III. The Brit. Form. recognizes a "concentrated solution of bismuth," prepared as follows:

Bismuth subnitrate. .av.oz. 2 gr. 350
 Sodium bicarbonateav.oz. 3½
 Citric acidav.oz. 2
 Nitric acidfl.oz. 2
 Solution of ammonium citratefl.oz. 4. .fl.dr. 5
 Ammonia water, 10 p. c.,
 Distilled water, each, enough
 to makefl.oz. 20

Dissolve the bismuth subnitrate in the nitric acid mixed with an equal volume of water by the aid of a little heat, and after cooling, add a solution of the citric acid in 2¾ fluidounces of distilled water. Then add gradually with stirring a solution of the sodium bicarbonate in 2¾ fluidounces of water, and wash the precipitate by decantation with successive portions of distilled water until the washings are free from nitrates. Col-

lect the precipitate, and after draining, dissolve it in 2 fluidounces and 3 fluidrams of ammonia water, using a little more ammonia water if necessary. To the solution add the solution of ammonium citrate and enough distilled water to make 20 fluidounces.

This preparation is twice the strength of the preceding one.

Solution of Bismuth and Ammonium Citrate.

See Solution of Bismuth.

Solution (Test) of Brazil Wood.

Boil 50 gm. of finely cut Brazil wood with 100 cc. of water during ½ hour, from time to time replacing the water lost by evaporation. Allow the mixture to cool, strain, wash the contents of the strainer with water until 100 cc. of colature are obtained, add 25 cc. of alcohol, and filter. This turns purplish-red with alkalies and yellow with acids.—U. S. P.

Solution of Bromids of Gold and Arsenic.

See Solution of Gold and Arsenic Bromids.

Solution of Bromin. (Smith's Solution of Bromin.)

Bromingr. 360
 Potassium bromidgr. 180
 Waterfl.oz. 3

Dissolve the potassium bromid in the water contained in a bottle, add the bromid, and shake the mixture until dissolved.

Keep the solution in glass-stoppered vials in a cool place.

As bromin vapor is very injurious to the respiratory passages and destructive to balances, it is often preferable to take the contents of an original bottle of bromin—weighing the bottle, both before opening it and after emptying it, in order to ascertain the exact weight of the bromin contained therein—and then to use a quantity of potassium bromid and of water proportionate to the quantities above given.—N. F.

Solution of Calcium Acetate. (Solution of Calcaria Acetica, Hahnemann.)

Boil clean oyster shells for one hour

in pure water, break or crush to coarse powder in a wedgewood or porcelain mortar, dissolve in diluted acetic acid by the aid of heat until the acid is saturated, filter, and reduce to one-fifth its volume. The solution obtained will be of a deep yellow color which, after a time, precipitates a dark brown, mucilaginous substance leaving a lighter colored liquid. To this lighter colored liquid add an equal quantity of dispensing alcohol.—Homeopathic.

This preparation contains about 10 per cent. of acetate of lime, and hence may be considered a 1 x solution. Dilutions are made from this with dispensing alcohol. See Dilutions, Homeopathic.

Solution of Calcium Chloride, Rademacher's. (Liquor Calcii Chlorati—Liquor Calcariae Muriaticæ.)

Calcium chlorid, pure....av. oz. $6\frac{1}{4}$
Waterfl.oz. 12
Dissolve and filter.—D. and H.

Solution of Calcium Hydrate. (Solution of Calcareo Caustic or Calcareo Usta.)

Fresh slaked limegr. $7\frac{1}{2}$
Distilled waterfl.oz. 16
Dissolve by agitation.

This makes a 3 x solution. Dilutions are to be made from it by addition of distilled water. See Dilutions, Homeopathic.

All preparations of this medicine should be freshly prepared and be kept in green or bohemian glass bottles.—Homeopathic.

For solution of calcium hydrate or lime of other pharmacopeias, see Water Lime.

Solution of Calcium Oxysulfuret.

See Solution of Sulfurated Lime.

Solution of Carbolic Acid.

What is usually understood by "solution of carbolic acid" is a 5 per cent. solution of carbolic acid in water, or about 7 fluidrams of liquefied carbolic acid with enough water to make 16 fluidounces.

The Eclectic solution is made from 1 part of carbolic acid, 3 of oil of lemon, and 100 of alcohol.

Solution of Carbolate of Sodium.

See Solution of Sodium Carbolate.

Solution of Carmine.

Carmineav.oz. 1
Ammonia water (U. S. P.,
or 10 p. c.).....fl.oz. $5\frac{1}{2}$
Glycerinfl.oz. $5\frac{1}{2}$
Water, to make.....fl.oz. $14\frac{1}{2}$

Triturate the carmine to a fine powder in a wedgewood mortar, gradually add the ammonia water, and afterwards the glycerin, under constant trituration. Transfer the mixture to a porcelain capsule, and heat it upon a water bath, constantly stirring, until the liquid is entirely free from ammoniacal odor. Then cool, and add enough water to make $14\frac{1}{2}$ fluidounces.

The best quality of carmine, known in commerce as "No. 40," should be used for this preparation.—N. F.

Solution, Carter's.

Zinc sulfategr. 2
Boric acidgr. 20
Camphor waterfl.dr. 4
Water, to make.....fl.oz. 4

For the eyes.—N. Y. Hospitals.

Solution of Chlorin.

Chlorin water, U. S. P.
strengthfl.oz. 1
Distilled waterfl.oz. 3

—Homeopathic.

This makes a 3 x solution from which dilutions are made by addition of distilled water. See Dilutions, Homeopathic.

Solution of Chlorinated Lime. (Liquor Calcis Chlorinatæ.)

Chlorinated limeav.oz. $6\frac{3}{4}$
Distilled watergall. $\frac{1}{2}$

Mix, transfer to a bottle, set aside for 3 hours, shaking occasionally, and strain through muslin.

Preserve in a stoppered bottle in a cool, dark place.—Brit. Pharm.

The solution should be capable of yielding, when fresh, about 3 per cent. of available chlorin.

Solution of Chlorinated Potassa. (Javelle Water—Eau de Javelle—Liquor Potassæ Chloratæ.)

Potassium carbonateav.oz. 2
 Chlorinated limeav.oz. $2\frac{3}{4}$
 Water, to make.....fl.oz. 32

Mix the chlorinated lime, contained in a tared flask, with 12 fluidounces of water. Dissolve the potassium carbonate in 9 fluidounces of boiling water, and pour the hot solution into the mixture first prepared. Shake the flask well, stopper it, set it aside to cool, and then add enough water to make the contents weigh $34\frac{1}{2}$ av. ounces. Allow the suspended matters to subside, and remove the clear solution by means of a siphon, or by straining through muslin.

Keep the product in well-stoppered bottles.

The chlorinated lime for this preparation should not contain less than 25 per cent. of available chlorin.—N. F.

Solution of Chlorinated Soda. (Liquor Sodæ Chloratæ or Chlorinatæ—Labarraque's Solution—Liquor Natri Hypochlorosi.)

Sodium carbonate, mono-hydratedav.oz. $4\frac{1}{2}$
 Chlorinated limeav.oz. $6\frac{1}{4}$
 Water, to make.....gall. $\frac{1}{2}$

Triturate the chlorinated lime with 14 fluidounces of water, gradually added, until a uniform mixture results. Allow the heavier particles to subside, and transfer the thinner, supernatant portion to a filter. Then triturate the residue again with 14 fluidounces of water, transfer the whole to the filter, and when the liquid has drained off, wash the filter and contents with 7 fluidounces of water. Dissolve the sodium carbonate in 20 fluidounces of hot water, and add this solution to the previously obtained filtrate contained in a suitable vessel. Stir or shake the mixture thoroughly and if it should become gelatinous, warm the vessel until the contents liquefy. Then transfer the mixture to a new filter, and when no more liquid drains from it, wash the filter and contents with enough water to make the product measure $\frac{1}{2}$ gallon.—U. S. P.

The chlorinated lime used for this preparation should be capable of yielding at least 30 per cent. of available chlorin.

The product should be kept in well-stoppered bottles protected from light, and in a cool place.

This preparation is an aqueous solution of several chlorin compounds of sodium, containing at least 2.4 p. c. by weight of available chlorin.

The Brit. Pharm. directs $8\frac{1}{4}$ av.ounces of chlorinated lime and $12\frac{1}{2}$ of crystal sodium carbonate to $\frac{1}{2}$ gallon of distilled water.

Solution of Chromic Acid.

Chromic anhydrid (so-called "acid")av.oz. 1
 Distilled waterfl.dr. 23

Or dissolve 152 grains of "acid" in 1 fluidounce of water.—Brit. Pharm.

Solution of Coal Tar. (Liquor Picis Carbonis, an Imitation of Liquor Carbonis Detergens.)

Soap bark, No. 20 powder.av.oz. $1\frac{1}{2}$
 Alcoholsufficient
 Prepared coal tar.....av.oz. 3

Extract the drug by percolation with the alcohol so as to obtain $14\frac{1}{2}$ fluidounces of product; to this add the tar, digest at a temperature of about 50 deg. C. for 2 days, agitating occasionally, allow to become cold, and decant the clear liquid or filter.—Brit. Pharm.

Prepared coal tar (Pix carbonis præparata) is made by placing commercial tar in a shallow vessel, and heating to a temperature of 50 deg. C. for an hour, stirring frequently.

Solutions, Concentrated. (Liquores Concentrati.)

The present (1898) edition of the Brit. Pharm. recognizes a number of preparations known as "concentrated solutions" which are really decoctions or infusions in concentrated form, and are usually prepared by extracting the drug with a hydroalcoholic menstruum. They are 10 times the strength of the corresponding infusion except concentrated compound, solution of sarsaparilla which

is 8 times the strength of the corresponding decoction.

They are described under the head of the corresponding infusion or decoction.

Solution of Conium.

Inspissated juice of conium.	.gr. 225
Tincture of tolu.fl.oz. 4½
Madeira winefl.oz. 6
Waterfl.oz. 6

—Eclectic.

Solution of Cresol, Compound.

Cresolav.oz. 7¾
Linseed oil, rawav.oz. 6
Potassium hydroxid (caustic potash)av.oz. 1¼
Water, to makeav.oz. 15½

Dissolve the potassa in 7 fluidounces of water in a tared dish, add the oil and mix thoroughly. Then add the cresol and stir until a clear solution is produced and finally add the remainder of the water.—U. S. P.

The product contains 50 per cent. by weight of cresol.

The Germ. Pharm. recognizes a very similar preparation under the name Saponated Solution of Cresol which is made by warming together equal parts by weight of crude cresol and soft (green) soap until a clear solution is obtained.

See also a very similar preparation under Tincture of Cresol, Saponated.

Solution of Crotalus.

This is a Homeopathic preparation consisting of solution of 73 grains of drug in 16 fluidounces of glycerin. This makes a 2 x solution. See Solutions, Homeopathic.

Dilutions are to be made from this solution with glycerin. See Dilutions, Homeopathic.

The drug is the venom of the rattlesnake, procured by compressing the gland while the serpent is pinioned in a frame or is under the influence of chloroform.

Solution of Cuprum Acetate.

Copper acetate, pure.gr. 73
Distilled waterfl.oz. 16

—Homeopathic.

This makes a 2 x solution, from which 3 x and higher are to be made with distilled water. See Dilutions, Homeopathic.

Preparations of copper acetate should be freshly made as required.

Solution of Fehling's. (Alkaline Cupric Tartrate Volumetric Solution—Solution of Potassio-Cupric Tartrate.)

I.

The Copper Solution.—Dissolve 34.67 gm. of carefully selected, small crystals of pure copper sulfate, showing no efflorescence or of adhering moisture, in enough distilled water to make the solution measure, at 25 deg. C., exactly 500 cc.—U. S. P.

Keep this solution in small, well-stoppered bottles.

The Rochelle Salt or Alkaline Tartrate Solution.—Dissolve 173 gm. of pure rochelle salt and 75 gm. of potassium hydrate (pure potassa of the U. S. P. containing 85 per cent. of absolute potassium hydrate) in enough distilled water to make the solution measure, at 25 deg. C., exactly 500 cc.

Keep the solution in small, rubber-stoppered bottles.

For use, mix exactly equal volumes of the two solutions at the time required.

II.

No. 1 is made from 34.64 grams of copper sulfate in crystals, 0.5 cc. of sulfuric acid (98 p. c.), and distilled water enough to make 500 cc.

No. 2 is made from 176 grams of rochelle salt, 77 grams of sodium hydrate, and distilled water enough to make 500 cc.

Equal volumes of Nos. 1 and 2 are to be mixed at the time of using.—Brit. Pharm.

Solution of Ferrum Acetate.

This is to be prepared by making a fresh solution of 1 part of ferric acetate in 9 parts of distilled water. A solution of the same strength may be made by mixing 2 volumes of U. S. P. solution

of iron acetate with 5 of distilled water.
—Homeopathic.

This forms a 1 x solution, from which dilutions may be made by addition of distilled water as described under Dilutions, Homeopathic, which see.

Solutions, Germicide. ("Germicide.")

Thymol	gr. 120
Oil of eucalyptus	fl.oz. 1
Oil of lavender	fl.oz. 1
Alcohol	fl.oz. 12¾
Water, to make.....	fl.oz. 16

Dissolve the thymol and oils in the alcohol, add the water and filter, if necessary.—N. F.

Solution of Gold and Arsenic Bromids.

Arsenous acid	gr. 18
Gold tribromid	gr. 24
Bromin water, distilled water, each	sufficient

Introduce the arsenous acid and about 18 fluidrams of bromin water into a flask and heat gently until all free bromin has disappeared. Then add bromin water, 20 to 30 drops at a time, until it will be present in slight excess, or until the solution does not become colorless after some time. Transfer the solution to a porcelain capsule, expel the excess of bromin with the aid of gentle heat, dilute it with water to about 10 fluidounces, and dissolve in this the gold tribromid, adding enough water to make 16 fluidounces.

Ten minims of this solution contain 1/32 grain of gold tribromid and the equivalent of 1/13 grain of arsenic tribromid.—N. F.

The quantity of gold tribromid required for the above formula may be made by placing 11 grains of gold leaf into a flask containing 5½ fluidounces of water and 115 grains of bromin, shaking the mixture until the gold is dissolved, then boiling to expel excess of bromin. When cold this solution may be added to the solution of arsenic bromid, previously prepared, and the mixture adjusted with the water to the proper volume.

Solution of Gold and Arsenic Iodid.

Arsenous acid	gr. 21
Iodin	gr. 52
Gold triiodid	gr. 24
Distilled water, to make....	fl.oz. 16

Introduce the arsenous acid and iodin into a flask, add about 8 fluidounces of water, and heat cautiously until the iodine is dissolved, being careful to avoid loss of iodine by volatilization. Dissolve the gold salt in this solution, then transfer to a porcelain capsule, and heat over a water bath until all the iodine is expelled, cool and add enough distilled water to make 16 fluidounces.

Ten minims of this solution contains 1/32 gr. gold triiodid and 1/32 gr. arsenic pentoxid or equal to 1/8 gr. of arsenic triiodid.—Cinc. Acad. Pharm.

Gold triiodid may be prepared by dissolving 30 grains of gold in a little nitrohydrochloric acid to form chlorid. Then heat gently with 35 grains potassium iodid and 3 fluidrams of diluted sulfuric acid, allow to cool, shake out the gold triiodid with ether, decant the ethereal solution, and evaporate the latter spontaneously.

Solution of Gutta-Percha. (Traumaticin.)

Gutta percha, thin slices....	av.oz. 1
Chloroform, commercial	fl.oz. 6½
Lead carbonate, fine powder.	av.oz. 1

Add the gutta percha to 5 fluidounces of the chloroform, contained in a bottle, cork it well, and shake it occasionally until the gutta percha is dissolved. Then add the lead carbonate, previously mixed with the remainder of the chloroform, and, having several times shaken the whole together, at intervals of half an hour, set the mixture aside until the insoluble matters have subsided and the solution has become perfectly clear. Lastly, decant the liquid and preserve it in small, cork-stoppered vials.—N. F. Appendix and U. S. P. 1880.

Purified gutta percha is now commercially available as so-called gutta percha tissue and may be used in place of the ordinary kind. A solution prepared from the purified article will not re-

quire clarification by lead carbonate or other means.

Solution, Homeopathic.

Solutions used in homeopathic pharmacy are solutions of substances in water or in alcohol.

Aqueous solutions are made of substances which are soluble in water but not in alcohol, or those which, when soluble in alcohol, are subject to chemical change or decomposition. These substances are to be dissolved in the proportion of 1/10, 1/100 or 1/1000, depending on the degree of solubility. Aqueous solutions as a rule are unstable and will keep but a short time. Distilled water only should be used for homeopathic preparations.

Alcoholic solutions (these are frequently but improperly called tinctures; they should always be known as solutions) are made of substances which either wholly or in part yield their medicinal properties to alcohol. This applies to liquids like oil of turpentine and other oils. These are to be made on the decimal scale, that is, in the proportion of 1 part by weight of the medicinal substance to 10 parts by volume of alcohol, and hence equal to the first decimal dilution (1 x). If the substance is not soluble in the proportion of 1 to 10, 1 part by weight should be dissolved in 100 parts of alcohol, this making the second decimal dilution (2 x).

If liquid acids are used or drugs containing water, this should be deducted from that contained in the solvent, and the anhydrous acid or drug taken as the unit of strength.

For further remarks on alcoholic solutions, see Tinctures, Homeopathic.

For method of indicating strength of dilutions, method of dilution or attenuation of liquids, etc., see Dilutions, Homeopathic.

Owing to indiscriminate interchange of the terms solution and tincture, if a homeopathic solution be not found in

this work under Solutions, then see under Tinctures.

Solution of Hydrastis, Colorless. (Compound Glycerite of Hydrastine—"Colorless Fluid Extract of Hydrastis or Golden Seal.")

I. Eccles' formula:

Hydrastine hydrochloridgr. 25
Aluminum chloridgr. 23
Calcium chloridgr. 20
Magnesium chloridgr. 18
Potassium chloridgr. ½
Diluted hydrochloric acidm. 10
Distilled waterfl.oz. 6
Glycerin, to makefl.oz. 16

Dissolve the salts in the water, add the acid, then the glycerin, and filter.

If the so-called hydrochlorid of aluminum is used instead of the anhydrous chlorid, somewhat more than double the amount is needed.

The above is based upon a chemical examination of the preparations of the market.

II.

Hydrastis, fine powderav.oz. 17½
Glycerinfl.oz. 8
Ethersufficient
Diluted sulfuric acidfl.oz. 1
Distilled waterfl.oz. 8

Exhaust the hydrastis with ether, recover the ether by distillation, to the residue add the water previously mixed with the acid, let stand 7 days, agitating frequently, decant the aqueous solution, and mix it with the glycerin.

III. This formula is also used:

Hydrastine hydrochloridgr. 20
Glycerinfl.oz. 6
Distilled waterfl.oz. 10
Mix, dissolve and filter.	

Solution of Hydriodic Acid.

A 10 per cent. solution of hydriodic acid may be prepared as follows:

Potassium iodidav.oz. 4½
Tartaric acidav.oz. 3¾
Distilled waterfl.oz. 16

Dissolve the solids separately, each in 8 fluidounces of the water, mix the solutions by thorough agitation, set aside in a cool place, preferably on ice, then decant the clear liquid, and filter.

The syrup may be extemporized by

mixing 1 volume of the above with 9 volumes of simple syrup.

Solution of Hydrochloric Acid.

Acid, U. S. P. strength.....gr. 570

Distilled water, to make....fl.oz. 4

—Homeopathic.

This is a 1 x solution. Dilutions are made with distilled water, to be freshly made, for immediate use only. See Dilutions, Homeopathic.

Solution of Hypophosphites.

Calcium hypophosphitegr. 256

Sodium hypophosphitegr. 145

Potassium hypophosphite ...gr. 128

Hypophosphorous acid, 30% .m. 45

Distilled water, to make...fl.oz. 16

Triturate the salts, add the acid, and dissolve them in the distilled water and filter.—N. F.

Each fluidram contains 2 gr. of calcium hypophosphite, about 1¼ gr. of sodium hypophosphite and 1 gr. of potassium hypophosphite.

Solution of Hypophosphites, Compound.

I.

Calcium hypophosphitegr. 64

Potassium hypophosphitegr. 64

Ferric hypophosphitegr. 32

Sodium hypophosphitegr. 16

Manganese hypophosphite ...gr. 16

Quinine hypophosphitegr. 16

Strychnine (alkaloid)gr. ½

Potassium citrategr. 64

Hypophosphorous acid, 30% .m. 45

Orange flower water.....fl.dr. 4

Glycerinfl.oz. 4

Distilled water, to make....fl.oz. 16

Dissolve the calcium, sodium and potassium hypophosphites in 5 fluidounces of distilled water. Also dissolve the remaining solids in 4 fluidounces of distilled water, adding the hypophosphorous acid. Mix the two solutions, add the orange flower water and glycerin, and enough distilled water to make 16 fluidounces. Allow the mixture to stand a day or two, if convenient, and filter.

II. (Compound solution of iron hypophosphite):

Calcium hypophosphitegr. 267

Sodium hypophosphitegr. 267

Magnesium hypophosphite...gr. 133

Solution of iron hypophos-

phite, No. IVfl.oz. 5

Distilled water, to make...fl.oz. 16

Dissolve the three hypophosphites in 10 fluidounces of distilled water, add the solution of iron hypophosphite and the acid, filter, and add enough distilled water through the filter to make the product measure 16 fluidounces.—Brit. Pharm.

Solution of Iodid of Arsenic and Gold.

See Solution Gold and Arsenic Iodid.

Solution of Iodin, Carbolized. (Boulton's Solution—French Mixture—Liquor Iodi Carbolatus.)

Compound tincture of iodine.fl.dr. 2

Carbolic acid, liquefied by

gentle heatm. 40

Glycerinfl.oz. 2½

Water, to make.....fl.oz. 16

Mix the glycerin with the acid and tincture, add enough water to make 16 fluidounces and expose the mixture to sunlight until it has become colorless.—N. F.

Solution of Iodin, Caustic. (Iodin Caustic—Churchill's Iodin Caustic.)

Iodinav.oz. 1

Potassium iodidav.oz. 2

Waterfl.dr. 30

Dissolve the potassium iodid and the iodine in the water.—N. F.

Solution of Iodine, Caustic, Lugol's.

Iodingr. 455

Potassium iodidgr. 910

Waterfl.oz. 2

Dissolve the potassium iodine in the water and add the iodine.

This is for application as a caustic.—H.

Solution of Iodin, Compound. (Lugol's Solution.)

I.

Iodingr. 200

Potassium iodidgr. 400

Distilled waterfl.oz. 7½

Dissolve the iodine and potassium iodine in the water.—U. S. P.

Keep the solution in glass-stoppered bottles.

This is the solution that is to be dispensed when Lugol's solution of iodine is demanded.

II.

Iodin	gr. 180
Potassium iodid	gr. 360
Rose water	fl.oz. 8

Distilled water may be substituted for the rose water.—Eclectic.

Solution, Iodin, Magendie's.

Iodin	gr. 2
Potassium iodid	gr. 240
Peppermint water	fl.oz. 6

Dissolve the potassium iodid in the water and add the iodin.

Solution of Iodin, Mild, Lugol's.

Iodin	gr. 1
Potassium iodid	gr. 2
Distilled water	fl.oz. 4½

This is used externally, for injection and for insufflation in coryza.—H.

Solution of Iodin, Rubefacient, Lugol's.

Iodin	gr. 180
Potassium iodid	gr. 360
Water	fl.oz. 6

Dissolve the potassium iodid in the water and add the iodin.—H.

Solution of Iron (Ferric), Acetate.

I.

Solution of iron (ferric) sulfate	av.oz. 8 or fl.oz. 5¾
Acetic acid, glacial, av.oz. 2, gr. 260 or fl.oz. 2, fl.dr. 3	
Ammonia water	fl.oz. 8½
Water, distilled water, each	sufficient

Mix the ammonia water with 30 fluid-ounces of cold water, and the iron solution with 6 pints of cold water. Add the latter solution gradually, with constant stirring, to the ammoniacal liquid, let the mixture stand until the precipitate has subsided as far as practicable, and then decant the supernatant liquid. Add to the precipitate 6 pints of boiling water, mix well, and again set the mixture aside as before. Repeat the washing with successive portions of boiling water, in the same manner until the washings are no longer affected by sodium-cobaltic-nitrite test solution (showing the removal of ammonia and its salts). Transfer the mixture to a wet muslin strainer, allow the precipitate to drain completely, and press it, folded in

the strainer, until it is reduced to a weight of 7 av.ounces or less. Now add the precipitate gradually to the glacial acid contained in a tared jar provided with a glass stopper, stirring the mixture after each addition until each portion added is nearly dissolved before adding another portion. Finally add enough distilled water to make the product weigh 10 av.ounces or measure 8¼ fluidounces, mix thoroughly, allow it to become clear by subsidence from standing, and decant the clear liquid.

The glacial acetic acid should contain at least 99 p. c. of absolute acid, the ammonia water should contain at least 10 p. c. of absolute ammonia; if weaker, proportionately more of it must be employed.

Keep the product in well-stoppered bottles, in a cool place, protected from light.—N. F. Appendix and U. S. P. 1890.

The product is an aqueous solution of ferric acetate containing about 31 p. c. of the anhydrous salt, and corresponding to about 7.5 p. c. of metallic iron.

The formula of the Brit. Pharm. is practically like the preceding.

II. For the homeopathic solution, see Solution of Ferrum Acetate.

Solution of Iron, Acid, Howe's.

This is an eclectic preparation first advocated by Prof. Howe. It is as follows:

Ferrous sulfate, pure.....	av.oz. 2
Nitric acid, pure.....	fl.oz. 1
Distilled water	fl.oz. 10

Triturate the ferrous sulfate to coarse powder, add the water and acid, and bottle when the liquid assumes a clear amber color. No heat is to be employed.

Solution of Iron Albuminate.

I.

Egg albumen, dry.....	gr. 565
Solution of iron oxychlorid.....	fl.oz. 4
Alcohol	fl.dr. 29
Aromatic elixir	fl.oz. 12

Solution of sodium hydrate,

Distilled water, each, to

makefl.oz. 31

Dissolve the albumen in 62 fluidounces

of distilled water, strain the solution through muslin, and add the iron solution previously diluted with 62 fluidounces of distilled water. Dilute 175 minims of solution of sodium hydrate with 3 fluidounces of distilled water, and cautiously add enough of this liquid to the iron-albumen mixture to exactly neutralize it. This is shown by the fine, light precipitate, first formed, becoming flocculent and settling to leave a clear and nearly colorless supernatant liquid. Wash the precipitate rapidly with distilled water by decantation, until the washings give but a faint cloudiness with silver nitrate test solution. Then drain the precipitate on a muslin strainer, transfer it to a porcelain dish, immediately add 141 grains of solution of sodium hydrate, and while stirring add distilled water, not exceeding $4\frac{1}{2}$ fluidounces, until the precipitate is dissolved. Finally add the alcohol and aromatic elixir, previously mixed with enough distilled water to make the product measure 31 fluidounces.—N. F.

Each fluidram of this preparation contains about $\frac{2}{5}$ of metallic iron in the form of albuminate.

II.

Ferric chlorid (solid).....gr. 72
White of egg, fresh.....fl.oz. 6
Glycerinfl.oz. 4
Distilled water, to make....fl.oz. 16

Dissolve the ferric chlorid in 2 fluidounces of water, mix the egg-white with 4 fluidounces of water, add the iron solution to the egg mixture, allow to stand for 12 hours, then add the glycerin, mix, filter, and add enough water through the filter to make a total filtrate of 16 fluidounces.—Cinc. Acad. Pharm.

Keep the product in well filled bottles in a cool place.

Each fluidounce contains what is about the equivalent of 40 drops of tincture of iron chlorid, U. S. P.

III.

Egg-white, drygr. 255
Solution of iron oxy-

chloridav.oz. 2
Solution of soda, U. S. P....m. 75
Cinnamon water, Germ.

Pharm.fl.dr. 14
Aromatic tincturem. 20
Alcoholfl.oz. 3
Distilled watersufficient

Dissolve the egg-white in 16 fluidounces of distilled water, strain, and add slowly, with constant stirring, to the iron solution previously diluted with 16 fluidounces of distilled water. To completely precipitate the iron albuminate, neutralize the liquid exactly with $\frac{3}{4}$ per cent. solution of soda (3 volumes of U. S. P. solution of soda and 19 of water), adding the liquid slowly and with constant stirring. The precipitate is to be washed repeatedly by affusion of water and subsequent decantation of liquid until the washings when acidulated with nitric acid do not give more than a slight opalescence with solution of silver nitrate. Then decant to a suitable strainer, allow the liquid to drain, transfer the precipitate to a tared bottle, add to it the solution of soda previously mixed with 5 fluidrams of distilled water, and agitate until dissolved. Then add the cinnamon water, tincture, and alcohol, and then enough distilled water to make the product weigh $16\frac{3}{4}$ av.ounces.—Germ. Pharm.

IV. Solution of iron albuminate may also be prepared by dissolving iron albuminate, which is now commercially available in scale and powder forms, in distilled water, and flavoring in any suitable or desired manner.

Solution of Iron and Ammonium Acetate. (Mixture of Iron and Ammonium Acetate, U. S. P. 1880—Basham's Mixture.)

Tincture of iron chlorid....fl.dr. 5
Acetic acid, diluted.....fl.oz. 1
Solution of ammonium acetatefl.oz. 8
Aromatic elixirfl.oz. 2
Glycerinfl.oz. 2
Distilled water, to make....fl.oz. 16

To the ammonium solution (which should not be alkaline), add, successively, the dilute acid, the tincture, the elixir, and the glycerin, and then enough

water to make the product measure 16 fluidounces.

This preparation should be made freshly, as wanted for use.—U. S. P.

The U. S. P., in directing this, to be made as needed, is in error, as when made strictly as directed this is not necessary.

This is double the strength of the preparation of the U. S. P. 1890.

Solution of Iron and Ammonium Citrate.

Iron citrate, soluble.....av.oz. 8
Distilled water, to make....fl.oz. 16
Dissolve and filter.

Solution of Iron (Ferric), Chlorid. (Solution of Perchlorid or Sesquichlorid of Iron.)

I.

Iron, in fine, bright wire,
cut into small pieces....av.oz. 3
Hydrochloric acidav.oz. 16
Nitric acid,
Distilled water, each.....sufficient

Introduce the iron into a flask or bottle having the capacity of about 3 pints, pour upon it a mixture of $9\frac{3}{4}$ av.ounces of hydrochloric acid and $5\frac{1}{2}$ fluidounces of distilled water, and heat the mixture upon a water bath for not less than an hour and fifteen minutes, or until effervescence ceases; then heat it to the boiling point, filter it through paper, and having rinsed the flask or bottle and wire with a little hot distilled water, pass the rinsings through the filter. To the filtrate add $5\frac{1}{4}$ av.ounces of hydrochloric acid, and then add this mixture, slowly and gradually, in a thin stream, to $1\frac{1}{2}$ av.ounces of nitric acid contained in a capacious porcelain vessel, and warm gently. After effervescence ceases, apply heat, by means of a sand bath, stirring occasionally, until the liquid is free from nitric acid. If the solution has acquired a black color, continue the addition of nitric acid, drop by drop, until red fumes are no longer evolved and the solution assumes a clear reddish-brown color. Finally add the remaining 1 av.ounce of hydrochloric acid and enough distilled water to make the

product weigh $23\frac{1}{2}$ av.ounces or measure $18\frac{1}{4}$ fluidounces.—U. S. P.

While the U. S. P. directs finally to add water to make up a definite weight, in actual practice it may be found necessary to evaporate in order to reduce to this weight.

A convenient form of iron wire for making this preparation is that which is commercially available under the name "card teeth." The acids for making this preparation must be of full strength, the hydrochloric 31.9 p. c. of absolute acid, the nitric 68 p. c. of absolute acid.

The product is an aqueous solution of ferric chlorid containing not less than 29 p. c. of anhydrous salt, corresponding to about 48 p. c. of crystallized salt (with 12 molecules of water), or to 10 p. c. of metallic iron, and containing also some free hydrochloric acid.

II. The Brit. Pharm. recognizes a strong solution of ferric chlorid and a solution of ferric chlorid. The strong solution is made practically like that of the U. S. P., but is slightly stronger, representing almost 16 per cent. of metallic iron.

The other solution is made by mixing 1 volume of this solution with 3 volumes of distilled water.

III. The preparation of the Germ. Pharm. contains only 10 p. c. of metallic iron.

Solution of Iron (Ferrous) Chlorid. (Solution of Iron Protochlorid.)

Iron, in fine, bright, and finely-cut wireav.oz. $23\frac{1}{4}$
Hydrochloric acid (U.S.P.)av.oz. 11
Glycerinfl.oz. 4
Diluted hypophosphorous acid
(U. S. P. or 10 p. c.).....m. 75
Distilled water, to make....fl.oz. 16

To the iron contained in a flask, add 6 fluidounces of distilled water, and the hydrochloric acid, and apply a gentle heat, until effervescence ceases. Then raise the liquid to boiling, keep it at this temperature for a short time so that the iron may be brought into solution as far as possible, filter the solution through a pellet of absorbent cotton placed in the

neck of a funnel, and wash the cotton with a little distilled water. Evaporate the filtrate, over a boiling water bath, until crystals begin to form, and the escaping vapors cease to redden, or only slightly affect, moistened blue litmus paper. Now add the glycerin and the diluted hypophosphorous acid, continue the heat, if necessary, until a perfect solution is obtained; then transfer the liquid to a graduated bottle, allow it to cool, and add enough distilled water to make 16 fluidounces.

Each fluidram represents about 20 gr. of protochlorid of iron (ferrous chlorid).—N. F.

A convenient and satisfactory form of iron for making this preparation is what is known as "card teeth."

Solution of Ferric (Iron) Citrate.

Solution of iron (ferric) sul-
fateav.oz. 16¾ or fl.oz. 12¼
Citric acidav.oz. 6¼
Ammonia water, 10 p. c.fl.oz. 17½
Watersufficient

Mix the ammonia water with 60 fluidounces of cold water, and the iron solution with 12½ pints of cold water. Add the latter solution slowly to the ammoniacal liquid, stirring constantly. Pour the mixture on a wet muslin strainer, and allow the liquid to run off and the precipitate to drain. Then remove the moist mass from the strainer, mix it well with 7½ pints of cold water, again pour it on the strainer and let it drain. Repeat this washing with several successive portions of cold water in the same manner, until the washings cease to produce more than a slight cloudiness with barium chlorid test-solution. Then allow the precipitate to drain completely, transfer it to a porcelain capsule, add the citric acid, and heat the mixture on a water bath to 60 deg. C., stirring constantly, until the precipitate is dissolved. Lastly, filter the liquid, and evaporate it at the above-mentioned temperature until it weighs 20¾ av.ounces or measures 16 fluidounces.—N. F. Appendix and U. S. P. 1890.

The precipitated ferric hydrate retains enough water to enable the ferric citrate to be dissolved; in fact, as may be observed, a portion of the water has to be evaporated from the solution.

The product is an aqueous solution of ferric citrate, containing about 35 p. c. of the anhydrous salt, corresponding to about 7½ p. c. of metallic iron.

Solution of Dialysed Iron. ("Dialyzed Iron"—Dialyzed Solution of Oxid.)

Solution of iron chlorid, U.

S. P.fl.oz. 5
Ammonia water, 10 p. c.,
Distilled water, each.....sufficient

Mix 4¼ fluidounces of the iron chlorid solution with 20 fluidounces of water and stir into the mixture sufficient diluted ammonia water to impart a distinct ammoniacal odor. Collect the precipitate on calico or muslin, wash it with distilled water and squeeze the strainer to remove superfluous water. Add the precipitate to the remainder of the solution of iron chlorid, stir thoroughly, warm gently, and when complete, or nearly complete solution is effected, filter if necessary, place the liquid in a dialyzer, and dialyze in the usual manner until the liquid on the dialyzer is almost tasteless. Then add to this liquid enough water to make it measure 16 fluidounces.—Brit. Pharm. 1885.

Most of the so-called "dialyzed iron" of the market is not prepared by dialysis, but is made by a process the same or very similar to the one given under Solution of Iron Oxychlorid, which see.

The above contains 10 per cent. of iron oxychlorid. The preparation sold in this country usually contains but 5 p. c. of ferric oxid, and it is frequently made to contain one-eighth of its volume of glycerin to prevent gelatinization.

Solution of Iron Hypophosphite.

This solution is used in making compound solutions and syrups of the hypophosphites:

I.

Iron and ammonium sulfate
(U. S. P.), in perfect crys-

tals	gr. 600
Sodium hypophosphite	gr. 400
Potassium citrate	gr. 390
Glycerin	fl.dr. 5
Distilled water, to make...	fl.oz. 4

Dissolve the iron and ammonium sulfate, and the sodium hypophosphite, each, in 6 fluidounces of the water, and, if necessary, filter each solution. Then mix them, and stir thoroughly; after a few minutes transfer the resulting magma to a close linen or muslin strainer, and wash the precipitate with about 2 fluidounces of water. Allow it to drain, and then press it forcibly in the strainer, so as to remove as much of the liquid as possible. Transfer the precipitate from the strainer to a mortar, add to it the potassium citrate, and triturate until a perfectly smooth paste results. that may have formed, and keep the solution in small, completely-filled and well-corked bottles.

II. This preparation may also be prepared in the following manner (N. F.):

Iron hypophosphite (ferric) ..	gr. 300
Potassium citrate	gr. 390
Glycerin	fl.dr. 5
Distilled water, to make...	fl.oz. 4

Triturate the iron hypophosphite with 3 fluidounces of water to a perfectly smooth mixture, then add the potassium citrate and glycerin, and apply a gentle heat, until solution has been effected. Allow the liquid to cool, and add enough water to make 4 fluidounces. Place the solution for several days in a cold place, if convenient; then pour off the clear solution from any precipitate or crystals that may have formed, and keep the solution in small, completely-filled and well-corked bottles.

Six minims of each of the above solutions contain 1 gr. of ferric hypophosphite, or 1 fluidram contains 10 grs. The following two formulas contain ferrous, instead of ferric, hypophosphite.

III.

Sodium or potassium hypo-

phosphite	gr. 360
Ferrous sulfate, pure, clear ..	gr. 480
Potassium citrate	gr. 400
Glycerin	fl.dr. 5
Distilled water, to make...	fl.oz. 4

Prepare like No. I. It is of the same strength as the latter, but contains ferrous instead of ferric, hypophosphite.

IV. The Brit. Form. (last edition) has a formula for a preparation it calls "strong solution of iron hypophosphite:"

Ferric chlorid, dry	gr. 800
Sodium hypophosphite	gr. 880
Citric acid	gr. 640
Stronger ammonia water (28 p. c.)	fl.dr. 5½
Solution of potash, distilled water, each	sufficient

Dissolve the chlorid and hypophosphite each in 8 fluidounces of distilled water and pour the solution of the hypophosphite slowly with stirring into the iron solution. Collect the precipitate and wash it with successive portions of distilled water until the washings are almost free from chlorid. Dissolve the well-drained precipitate in a solution of the ammonia water and acid in 4 fluidounces of distilled water, and filter. Determine the proportion of iron hypophosphite present in this solution by the following process: Take any small amount of the solution, dilute it with an equal volume of distilled water, add an excess of solution of potash and apply a gentle heat. Collect the precipitate, wash, dry, ignite and weigh the resulting iron oxide. The weight in grammes multiplied by the factor 137.1 will indicate the number of grains of iron hypophosphite in each fluidounce of solution. Adjust the volume of liquid by the addition of distilled water so that each fluidounce shall contain 40 grs. of iron hypophosphite.

Ferric hypophosphite is now commercially available and may be used instead of making it by precipitation, although when freshly prepared it is more readily soluble.

The corresponding preparation of the former Brit. Form. was a solution of ferrous hypophosphite. See No. V.

V.

Ferrous sulfate, crystal, pure.....	gr. 155
Barium hypophosphite (con- taining not less than 95 of Ba. $(\text{H}_2 \text{P O}_3)_2$, $\text{H}_2 \text{O}$	gr. 170
Diluted sulfuric acid, U. S. P.m.	30
Distilled water	fl.oz. 5

Dissolve the iron salt in 1 fluidounce of distilled water, and place in a tall bottle of a capacity not less than 5 fluidounces. Dissolve the barium hypophosphite in the remainder of the water, and add slowly with agitation to the iron solution. Add the sulfuric acid, shake again, set aside for 2 days, and decant the clear liquid.

Preserve in filled bottles, in a dark place.—Brit. Form. (2nd edit.).

Each fluidram contains about 5 grs. of ferrous hypophosphite.

Solution of Iron (Ferrous) Iodid.

I.

Iron, in the form of fine, bright, and finely-cut wire	av.oz. $3\frac{1}{2}$
Iodin	av.oz. 11
Diluted hypophosphorous acid, 10%,	fl. dr. 3
Distilled water to make.....	fl. oz. 16

Mix the iron with 12 fluidounces of distilled water in a flask, add about one-half of the iodine, and agitate continuously until the liquid becomes hot. Then moderate the reaction by placing the flask in cold water, or by allowing cold water to flow over it, meanwhile keeping up the agitation. When the reaction has moderated, add one-half of the remaining iodine at a time, and carefully moderate the reaction each time, in the manner above directed. Finally, raise the contents of the flask to boiling and filter immediately through moistened pure filtering paper (the point of the filter being supported by a pellet of absorbent cotton) into a bottle containing the diluted hypophosphorous acid. When all the liquid has passed, rinse the flask with 4 fluidrams of boiling distilled water, and pass this through the filter. Cork the bottle and set it aside to cool. Finally, add enough distilled water to

make the product measure 16 fluidounces.

This solution contains about 8 p. c. of ferrous iodid. On mixing 1 volume with 11 volumes of simple syrup, the product will be practically identical with syrup of iron iodid (U. S. P.).—N. F.

A convenient and satisfactory form of iron for making this preparation is what is known as "card teeth."

II.

Iron, fine powder.....	av.oz. 3
Iodin	av.oz. $10\frac{1}{4}$
Distilled water	fl.oz. 12

Mix the iodine and water, add the iron gradually, constantly stirring, meanwhile cooling the mixture from time to time if the temperature rises too high; filter the resulting greenish liquid.—Germ. Pharm.

The product contains 50 p. c. of ferrous iodid.

Solution of Iron and Manganese Saccharate.

Formula of Berlin Apotheker Verein:

Iron oxid, saccharated....	av.oz. 5
Solution of manganese glu- cosate	gr. 380
Alcohol	fl.oz. 2
Tincture of orange peel.....	m. 30
Aromatic tincture	m. 15
Tincture of vanilla.....	m. 15
Acetic ether	drops. 3
Distilled water	fl.oz. 11

Dissolve the iron oxid in the water and add the other ingredients.—D.

**Solution of Iron (Ferric) Nitrate.
(Solution of Pernitrate of Iron.)**

I.

Solution of iron sulfate, av.oz. $2\frac{1}{2}$, or.....	fl.dr. $14\frac{3}{4}$
Ammonia water, 10 p. c.....	fl.oz. $2\frac{3}{4}$
Nitric acid, gr. 500, or.....	fl.dr. $6\frac{1}{2}$
Water, distilled water, each, sufficient	

Mix the ammonia water with 8 fluidounces of cold water, and the iron solution with 24 fluidounces of cold water. Add the latter solution slowly to the ammoniacal liquid, stirring constantly. Let the precipitate subside as far as practicable and decant the supernatant liquid. Add to the precipitate 16 fluidounces of cold water, mix well, and again set the mixture aside as before. Repeat the

washing with successive portions of cold water, in the same manner, until the washings cease to produce but a slight cloudiness with barium chlorid test solution. Pour the washed precipitate on a wet muslin strainer, and let it drain thoroughly. Then transfer it to a porcelain capsule, add the acid and stir with a glass rod until a clear solution is obtained. Finally, add enough distilled water to make the finished product weigh $16\frac{3}{4}$ av. ounces or measure $15\frac{1}{4}$ fluidounces. Filter, if necessary.—N. F. Appendix and U. S. P. 1890.

The nitric acid should be of full strength, viz.: Containing 68 p. c. of absolute acid, in order to produce a solution of normal ferric nitrate.

The product is an aqueous solution of ferric nitrate, containing about 6.2 p. c. of the anhydrous salt, and corresponding to about 1.4 p. c. of metallic iron.

II.

Irongr. 245
Nitric acid, pure.....fl.dr. $19\frac{1}{2}$
Distilled water, to make...fl.oz. 16

Dilute the acid with $8\frac{1}{2}$ fluidounces of the water, add the iron, set aside until the metal is dissolved, taking care to moderate the action, should it become too violent, by the addition of a little more distilled water, filter the liquid, and add enough distilled water to make 16 fluidounces.—Brit. Pharm.

This solution contains 3 p. c. of metallic iron, and is therefore more than twice the strength of the U. S. P. solution.

Solution of Iron Oxychlorid.

Solution of iron chlorid, U.
S. P.av.oz. 6
Ammonia water, 10 p. c.av.oz. 6
Hydrochloric acid, U. S. P.gr. 173
Distilled water, to make...av.oz. 18

Mix the ammonia water with 50 fluidounces of cold distilled water, and the solution of iron chlorid diluted with 25 fluidounces of cold water. Add the latter slowly to the diluted ammonia water, constantly stirring. Let the mixture stand until the precipitate has subsided as far as practicable, and then decant the

supernatant liquid. Add to the precipitate 32 fluidounces of cold distilled water, mix well, and again set the mixture aside as before. Repeat the washing with successive portions of cold water in the same manner, until the washings produce only faint opalescence with silver nitrate test solution. Then drain the precipitate on a cloth, express the excess of moisture as much as practicable, transfer it into a jar and mix the hydrochloric acid with it. Let the mixture stand 3 days, stirring it occasionally, and, if necessary, complete the solution of the ferric hydroxid by heating to about 40 deg. C. Finally, add enough water to make the product weigh 18 av.ounces.—N. F.

This is a brown-red, clear, odorless liquid containing about 3.5 p. c. of iron in the form of oxychlorid.

This preparation is official in the Germ. Pharm. and may, according to that authority, be dispensed when solution of dialyzed iron is prescribed.

Solution of Iron Oxsulfate.

Ferrous sulfate, pure, crystalav.oz. $2\frac{3}{4}$
Nitric acid (U. S. P.)
av.oz. $2\frac{3}{4}$ orfl.dr. $14\frac{3}{4}$
Distilled water, to make...fl.oz. 16

Dissolve the iron salt in $13\frac{1}{2}$ fluidounces of boiling distilled water, in a flask, gradually add the nitric acid, and continue the heat until the escaping vapors cease to have a nitrous odor. When the reaction is completed, allow the liquid to cool and add enough distilled water to make 16 fluidounces.—N. F.

The nitric acid for the above must be of full strength, viz., containing 68 p. c. of absolute acid.

Solution of Iron Peptonate.

I.

Peptone, drygr. 290
Solution of iron oxychlorid,
.....fl.oz., 3, dr. $1\frac{1}{2}$
Alcoholfl.dr. 15
Aromatic elixirfl.oz. $6\frac{1}{4}$
Solution of soda, distilled
water, each, to make...fl.oz. 16

Dissolve the peptone in 32 fluidounces

of distilled water, and add the iron solution previously diluted with 32 fluidounces of distilled water. Dilute $1\frac{1}{2}$ fluidrams of solution of soda with $1\frac{1}{2}$ fluidounces of distilled water, and cautiously add enough of this solution to the iron-peptone mixture to exactly neutralize it. This is shown by the fine light precipitate first formed, becoming flocculent and settling to leave a clear and nearly colorless supernatant liquid. (An excess of the soda solution must be carefully avoided). Wash the precipitate rapidly with distilled water, by decantation, until the washings give but a faint cloudiness with silver nitrate test solution. Then drain the precipitate on a muslin strainer, transfer it to a porcelain dish, immediately add 102 grs. of solution of soda and, while stirring, add distilled water—not exceeding 19 fluidrams—until the precipitate is dissolved. Finally, add the alcohol and aromatic elixir, previously mixed with enough distilled water to make 16 fluidounces of product.—N. F.

Each fluidram contains about $\frac{2}{5}$ gr. of metallic iron in the form of peptonate.

II. Prepare like solution of iron peptonate with manganese, No. II., but omitting the manganese peptonate.—Cinc. Acad. Pharm.

III. Dietrich-Bartel formula:

Solution of iron oxychlorid.	f.oz.	2
Peptone, dry (free from salt)	gr.	240
Hydrochloric acid, pure.	m.	10
Alcohol	f.dr.	12
Brandy	f.dr.	14
Solution of soda, U. S. P.,		
distilled water, each.		sufficient

Mix the iron solution with 32 fluidounces of distilled water, and add to this gradually with stirring a solution of the peptone in 32 fluidounces of distilled water. Neutralize the mixture exactly by the cautious addition of solution of soda diluted with 6 times its volume of distilled water, constantly stirring meanwhile, about 60 to 70 minims of the solution being required. Wash the precipitate repeatedly with distilled water by

the process of effusion and decantation until the washings no longer contain chlorid, then collect it on a moistened strainer of thick linen or muslin. After the liquid has drained off, transfer the precipitate to an evaporating dish, add the acid, and heat on a water bath until completely dissolved. To this add the alcohol, brandy and enough distilled water to make 16 fluidounces.

IV. Any of the mixtures given under Elixir of Iron Peptonate, which see, may be used as solution of iron peptonate.

Solution of Iron Peptonate with Manganese.

I.

Ferric peptonate	gr.	328
Manganese citrate, soluble	gr.	58
Ammonia water, 10 p. c.	m.	100
Aromatic elixir	f.dr.	$6\frac{1}{4}$
Alcohol	f.oz.	$2\frac{1}{2}$
Distilled water, to make	f.oz.	16

Dissolve the peptonate in 4 fluidounces of distilled water, add the ammonia water and then the alcohol. Dissolve the manganese citrate in $1\frac{1}{2}$ fluidounces of distilled water, add it to the first solution. Then add the elixir and enough distilled water to make 16 fluidounces.—N. F.

If manganese peptonate is available, 188 grs. of this may be used in place of the manganese citrate directed in the above formula.

II.

Iron peptonate	av.oz.	$2\frac{1}{2}$
Manganese peptonate	gr.	730
Glycerin	f.dr.	$6\frac{1}{2}$
Aromatic spirit	f.dr.	$6\frac{1}{2}$
Spirit of cinnamon	f.dr.	$2\frac{1}{2}$
Distilled water, to make	f.oz.	16

Dissolve the salts in the glycerin and $10\frac{1}{2}$ fluidounces of water, add the two spirits and water to make 16 fluidounces, and filter.—Cinc. Acad. Pharm.

The solution represents about $\frac{1}{3}$ p. c. of manganese and $\frac{1}{2}$ p. c. of iron. Each fluidram contains about 6 grains of manganese peptonate and 9 grains of iron peptonate.

The peptonates are now commercially

available, or they may be made by the pharmacist.

III. Formula of the Berlin Apotheker Verein:

Iron peptonate (with 25 p. c. iron).....	gr. 184
Solution of manganese glu- cosate	gr. 384
Solution of soda, U. S. P.....	m. 220
Tincture of bitter orange peel	m. 30
Aromatic tincture	m. 15
Tincture of vanilla.....	m. 15
Acetic ether	drops 3
Alcohol	f.oz. 2
Simple syrup	f.oz. 2½
Distilled water	f.oz. 9¾

Dissolve the iron peptonate in 3¼ fluidounces of hot distilled water; allow to cool, add the syrup, then add gradually with frequent agitation the solution of soda previously mixed with 1¼ fluidounces of distilled water. The alkali is in slight excess so as to redissolve the precipitate. To the liquid add the manganese solution which has previously been mixed with a small quantity of solution of soda to render it slightly alkaline. To the clear liquid add the remaining ingredients previously mixed together.—D.

The solution is slightly alkaline and represents 0.6 p. c. of metallic iron and 0.1 p. c. of metallic manganese.

Solution of Iron Phosphate.

I.

Iron phosphate, soluble.....	av.oz. 8
Distilled water, to make.....	f.oz. 16

II. Puchner's formula for a solution of which 2 Cc are equivalent to 1 gram of soluble ferric phosphate:

Ferrous sulfate, pure, clear crystals	av.oz., 2, gr. 265
Sulfuric acid	m. 160
Potassium chlorate	gr. 132
Ammonia water, 10 p. c.	f.oz. 5½
Citric acid	av.oz. 2
Sodium phosphate, unefflor- esced	av.oz., 3, gr. 145
Water	sufficient

Add the sulfuric acid to 4 fluidounces of water contained in a glass or porcelain vessel, to this add the ferrous sulfate, warm gently until all is dissolved,

then add the potassium chlorate and continue the heat for one-half hour, or until a drop of the solution added to potassium ferricyanid test solution no longer produces a distinct green or bluish-green color. Add this solution slowly and with constant agitation to the ammonia water contained in a suitable vessel; to this mixture add 64 fluidounces of hot water, allow to subside, and after one-half hour decant or siphon off the clear supernatant liquid. To the residue add 32 fluidounces of hot water, allow to subside, and decant; repeat this washing with six portions of hot water, allowing the last portion to subside for at least six hours or over night. Decant or siphon off the clear liquid as closely as possible, then add to the remaining magma the citric acid and the sodium phosphate, warm gently until solution results, and then evaporate on a water bath at a temperature not exceeding 60 deg. C., until the solution measures 8 fluidounces.

Solution of Iron "Protoxide." (Solution of Iron Protocitrate—Solution of Ferrous Citrate.)

Ferrous sulfate, pure, crys- tal	av.oz. 3¼
Sodium carbonate, pure, crystal	av.oz. 3½
Citric acid	av.oz. 2
Distilled water, simple syrup, each	sufficient

Dissolve the two salts separately in 32 fluidounces of water, mix by adding the iron solution to the sodium solution with constant stirring, collecting the precipitate, washing it quickly with more water, until the washings are tasteless, then dissolve by the aid of a gentle heat in 4 fluidounces of water containing the citric acid and add enough simple syrup to make 16 fluidounces.

Solution of Iron Pyrophosphate.

Iron pyrophosphate, soluble.....	av.oz. 8
Distilled water, to make.....	f.oz. 16

Solution of Iron and Quinine Citrate.

Citrate of iron and quinine, soluble	av.oz. 8
Distilled water, to make.....	f.oz. 16
Dissolve and filter.	

Solution of Iron, Salicylated.

Salicylic acidgr. 640
 Sodium phosphate, clear
 crystals.....av.oz., 3, gr 288
 Or sodium phosphate, dried.gr. 640
 Iron pyrophosphate, scale....gr. 160
 Distilled water, to make...fl.oz. 16

Dissolve the iron pyrophosphate in 8 fluidounces of water by the aid of a gentle heat, and pour into the mixture of the salicylic acid and sodium phosphate contained in a mortar, stir until dissolved, and filter if necessary.—Cinc. Acad. Pharm.

Each fluidram represents 5 gr. of salicylic acid, $1\frac{1}{4}$ gr. of iron pyrophosphate and $12\frac{1}{2}$ gr. of crystallized sodium phosphate.

Solution of Iron (Ferric) Subsulfate.
 (Solution of Basic Ferric Sulfate
 —Solution of Persulfate of Iron
 —Monsel's Solution.)

Ferrous sulphate, pure, clear
 crystalsav.oz. $18\frac{1}{4}$
 Sulfuric acidav.oz. $13\frac{1}{4}$
 Nitric acid, distilled water,
 eachsufficient

Add the sulfuric acid to 13 fluidounces of distilled water in a capacious porcelain vessel, heat to nearly 100 deg. C., then add $1\frac{1}{8}$ av.ounces or 10 fluidrams of nitric acid, and mix well. Divide the ferrous sulfate, coarsely powdered, into four equal portions, and add these portions, one at a time, to the hot liquid, stirring after each addition until effervescence ceases. When all the ferrous sulfate is dissolved, add a few drops of nitric acid, and if this causes a further evolution of red fumes, continue to add nitric acid, a few drops at a time, until it no longer causes red fumes to be evolved, then boil the solution until it assumes a ruby-red color and is free from nitric acid. Lastly add enough distilled water to make the product weigh 27 av.ounces or measure $16\frac{3}{4}$ fluidounces.—U. S. P.

The two acids must be of full strength, the sulfuric containing 92½ p. c. of absolute acid, the nitric 68 p. c. of absolute acid.

The product should be kept in well-

stoppered bottles, in a moderately warm place (not under 22 deg. C.), protected from light.

This solution will sometimes crystallize, forming a semi-solid, whitish mass. When this occurs, the application of a gentle heat to the bottle will restore the liquid condition.

The product is an aqueous solution of basic ferric sulfate—this is not a definite compound—containing about 44 p. c. of this compound, corresponding to about 13.6 p. c. of metallic iron.

This preparation should be dispensed when solution of persulfate of iron is wanted.

Solution of Iron (Ferric) Sulfate.
 (Solution of Normal Ferric Sulfate—Solution of Tersulfate of Iron.)

Ferrous sulfate, pure, clear
 crystalsav.oz. $10\frac{1}{2}$
 Sulfuric acidav.oz. 2
 Nitric acid, distilled water,
 eachsufficient

Add the sulfuric acid to about 5 fluidounces of distilled water in a capacious porcelain vessel, heat the mixture to nearly 100 deg. C., then add 510 grains or $6\frac{1}{2}$ fluidrams of nitric acid, and mix well. Divide the ferrous sulfate, coarsely powdered, into four equal parts, and add these portions, one at a time, to the hot liquid, stirring after each addition until effervescence ceases. When all the ferrous sulfate is dissolved, if the solution has acquired a black color, add nitric acid, a few drops at a time, heating and stirring until it no longer causes red fumes to be evolved, and the solution assumes a clear reddish-brown color; then boil the liquid until it is free from nitric acid. Lastly add enough distilled water to make the product weigh 21 av.ounces (measure about $14\frac{3}{4}$ fluidounces). Filter if necessary.—U. S. P.

The two acids should be of full strength, viz., 68 per cent. of absolute nitric acid and 92½ per cent. of absolute sulfuric acid.

The product is an aqueous solution of

normal ferric sulfate, containing about 36 per cent. of this salt, corresponding to not less than 10 per cent. of metallic iron.

The preparation of the Brit. Pharm. is practically the same as that of the U. S. P.

Solution of Lead Subacetate. (Goulard's Extract—Strong Solution of Lead Subacetate—Acetum Plumbi or Saturni—Blei Essig or Extrakt.)

I.

Lead acetate, pure, crystal. av. oz. $4\frac{1}{2}$
 Lead oxid, pure. av. oz. $2\frac{3}{4}$
 Distilled water, to make. av. oz. 25

Dissolve the acetate in 18 fluidounces of boiling distilled water, add this solution slowly and in portions with constant stirring to the lead oxid (in finely powdered condition) contained in a porcelain dish of the capacity of about 1 quart, and boil the liquid for $\frac{1}{2}$ hour, with occasional stirring. Finally, when cool, filter the solution and add enough distilled water, which has previously been boiled and cooled, to make the product weigh 25 av. ounces (measure about 20 fluidounces). It is best filtered in a closely-covered funnel to exclude air.

This solution should be preserved in well-stoppered bottles.—U. S. P.

This is an aqueous liquid, containing in solution not less than 25 per cent. of lead subacetate.

This preparation may also be made without heat, the ingredients being mixed in a bottle and allowed to stand for several days, agitating frequently, until the oxid becomes white, then filtering as before.

II. The Brit. Pharm. directs 4 av. ounces and 75 grains of lead acetate and 2 av. ounces and 400 grains of lead oxid to make 16 fluidounces of solution, and is about one-fourth stronger than the U. S. P. solution.

III.

Lead acetate av. oz. $4\frac{1}{2}$
 Lead oxid av. oz. $1\frac{1}{2}$
 Distilled water fl. oz. $14\frac{1}{4}$

Triturate the two lead compounds and heat in a covered vessel on a water bath with 6 fluidrams of the water until the yellowish color of the mixture has changed to white or reddish-white. Then gradually add the remainder of the water, set aside in a closed vessel, allow to settle, and filter.—Germ. Pharm.

Solution of Lead Subacetate, Diluted. (Lead Water—Goulard's Lotion or Water—Blei Wasser—Aqua Plumbi or Saturnini.)

Solution of lead subacetate. fl. oz. 1
 Distilled water, previously
 boiled and cooled. fl. oz. $29\frac{1}{2}$

Keep in well-stoppered bottles.

The product contains 1 p. c. by weight of lead subacetate.—U. S. P.

The preparation of the Brit. Pharm. is made from 192 minims of strong solution (equivalent to $\frac{1}{2}$ fluidounce of the U. S. P. solution of lead subacetate), the same amount of alcohol, and enough recently boiled and cooled distilled water to make 32 fluidounces. The alcohol is to be mixed with the water, and then the solution is to be agitated with this mixture.

The preparation of the Germ. Pharm. is to be made from 1 part by weight of the strong solution (of the Germ. Pharm.) to 49 of water, equivalent to about $\frac{1}{2}$ fluidounce of the former to enough of the latter to make 32 fluidounces.

Solution of Licorice Extract.

Purified extract of licorice. sufficient
 Alcohol fl. oz. 2
 Glycerin fl. oz. 4
 Water, to make. fl. oz. 16

In a small portion of purified extract of licorice, weighed into a tared capsule, determine the amount of water, by drying it to a constant weight. Then take of this extract a quantity equivalent to $4\frac{1}{4}$ av. ounces of dry extract, dissolve this, on a water bath, in 4 fluidounces of water, add the glycerin, and allow the liquid to cool. Lastly, add the alcohol, and enough water to make 16 fluidounces.

Each fluidram represents 15 grains of dry extract of licorice.—N. F.

See also Glycerite of Licorice, which is double the strength of the above.

Solution (Test) of Litmus.

I.

Exhaust powdered litmus with three separate and successive portions (representing about 4 times its weight) of boiling alcohol (which removes the undesirable color erythrolitmin), each extraction lasting for about an hour. After draining off the alcohol, digest the residue with about an equal weight of cold water, and filter. (This blue solution, which contains some alkali, after being acidulated, may be used to make red litmus paper.) Finally extract the residue with about 5 times its weight of boiling water, and, after thoroughly cooling, filter.

The addition of 1 drop of tenth-normal acid or alkali volumetric solution to 50 cc. of water containing 5 drops of litmus, solution should produce a distinct change in color.—U. S. P.

Preserve the solution in wide-mouthed bottles stoppered with loose plugs of cotton so as to exclude dust but to admit air.

II.

Litmus, powder	grams 20
Alcohol	cc. 200
Distilled water	cc. 200

Boil the litmus with 80 cc. of the alcohol for one hour, pour away the clear liquid, repeat this operation with 60 cc. of alcohol, and then for a third time with the remainder of the alcohol. Digest the washed litmus in the distilled water, and filter the liquid.—Brit. Pharm.

Solution of Magnesium Carbonate. (Fluid Magnesia.)

Magnesium sulfate	av.oz. 2
Sodium carbonate, crystal, pure	av.oz. 2½
Distilled water	sufficient

Dissolve the salts separately each in 9½ fluidounces of distilled water, heat the magnesium solution to boiling, add

to it the sodium solution, boil them together until carbonic acid gas is no longer evolved, collect the precipitated magnesium carbonate on a muslin strainer, and wash it with distilled water until free from sulfate. Mix the washed precipitate with 19 fluidounces of distilled water, place the mixture in a suitable apparatus, force into it pure carbonic acid gas, let the mixture remain in contact with excess of the gas, retained under a pressure of three atmospheres, for 24 hours or longer, and decant the solution, into which again pass carbonic acid gas.

The solution should be kept in bottles of convenient size, securely closed to prevent escape of the gas.—Brit. Pharm.

When the bottles are opened, the solution effervesces only slightly or not at all.

Each fluidounce of solution contains nearly 10 grains of magnesium carbonate in the form of bicarbonate or acid carbonate of magnesium produced by contact of carbonic acid gas with magnesium carbonate.

Solution of Magnesium Borocitrate.

This may be prepared as follows:

Magnesium carbonate, powd..	gr. 310
Citric acid	gr. 620
Borax, powder	gr. 620
Water, to make.....	fl.oz. 16

Dissolve the citric acid in 2 fluidounces of water at a boiling temperature, add the magnesium carbonate and afterward the borax, filter, and then add the remainder of the water.

The solution contains about 10 gr. of the dry magnesium borocitrate in each fluidram.

Solution of Magnesium Bromid.

Diluted hydrobromic acid (U. S. P.)	fl.oz. 8
Magnesium carbonate	sufficient

Saturate the acid with a sufficient quantity (240 grains) of magnesium carbonate. When effervescence has ceased, filter.

Each fluidram contains about 7½ gr. of magnesium bromid.—N. F.

Solution of Magnesium Chlorid.

Homeopathic:

1x solution is to be made from 46 grains of anhydrous salt and 1 fluid-ounce of distilled water. 2x and higher solutions are to be made from this by adding distilled water according to the directions given under Dilutions, Homeopathic.

Solution of Magnesium Citrate.

I.

Magnesium carbonategr. 230
Citric acidgr. 508
Syrup of citric acid.....fl.oz. 2
Potassium bicarbonategr. 38
Distilled water, to make...fl.oz. 12

Dissolve the acid in 4 fluidounces of water, add the magnesium carbonate, stir until it is dissolved, filter into a suitable 12-ounce bottle containing the syrup, then add water to nearly fill the bottle, drop in the potassium bicarbonate, and immediately stopper the bottle securely. Lastly, shake the mixture occasionally until the bicarbonate is dissolved.—U. S. P.

This solution should be freshly prepared when wanted.

While the U. S. P. does not state that distilled water should be used, this should be preferred as it makes a more transparent and permanent preparation.

Innumerable formulas have been offered for this preparation. In some the amounts of acid and magnesium carbonate differ from that of the above, in others again calcined magnesia is used. See No. II.

Other solutions are used as substitutes for the above, among them being effervescent solutions of magnesium sulfate and of sodium citrate. See Solution of Magnesium Sulfate, Effervescent, and Solution of Sodium Citro-Tartrate, Effervescent.

II.

Citric acidgr. 360
Magnesia, calcinedgr. 105
Syrup of citric acid.....fl.oz. 1
Potassium bicarbonate, crystalgr. 40
Distilled water, to make...fl.oz. 12
Mix the acid, magnesia and 4 fluid-

ounces of water, stir or agitate until dissolved, add the syrup and the remainder of the water, filter, introduce the clear filtrate into a suitable bottle, add the potassium salt, and cork and tie over the bottle immediately.—Parrish.

The above is intended for 1 bottle.

Solution of Magnesium Sulfate, Effervescent. (Liquor Magnesiae Effervescens.)

Magnesium sulfategr. 360
Citric acidgr. 60
Syrup of citric acid.....fl.oz. 2
Potassium bicarbonate, crystalsgr. 35
Water, to make.....fl.oz. 12

Dissolve the magnesium sulfate and the acid in 8 fluidounces of water, add the syrup of citric acid, and filter the solution into a strong bottle of about 12 fluidounces capacity. Then add enough water to nearly fill the bottle, drop in the crystals of potassium bicarbonate, immediately close the bottle with a cork, and secure it with twine. Lastly, shake the bottle occasionally, until the crystals are dissolved.—N. F.

This preparation is to be bottled in what are commonly known as "citrate of magnesia bottles." It is a substitute for solution of magnesium citrate.

Solution of Manganese Glucosate.

Formula of Berlin Apotheker Verein:

Potassium permanganate ...gr. 224
Grape sugar, crystallized....
.....av.oz. 3..gr. 268
Soda (pure caustic soda)....gr. 82
Alcohol, distilled water,
eachsufficient

Dissolve the potassium salt in 27 fluidounces of hot distilled water, allow the solution to cool to about 60 deg. C., and add to it 121 grains of the sugar. After an hour, wash the precipitate twice with distilled water by the process of affusion and decantation, transfer it to a suitable strainer, allow the liquid to drain, press the precipitate lightly to remove most of the water, and transfer it to a porcelain capsule. Dissolve the soda in 9½ fluidrams of distilled water, add this and the remainder of the sugar to the magma in the capsule, and heat on a water bath

until the mixture is completely soluble in water. Dilute the liquid with enough distilled water to which has been added 5 per cent. of alcohol to make the total weigh 8 av.ounces.—D.

The product contains the equivalent of 2 per cent. of metallic manganese.

Dry manganese glucosate may be prepared by evaporating 3 fluidounces of the above solution to dryness on a water bath, and rubbing with enough sugar to make 2 av.ounces.

Solution of Mercury Albuminate.

Egg albumen, fresh.....gr. 585
 Mercuric chlorid, pure.....gr. 39
 Sodium chloridgr. 156
 Distilled waterfl.oz. 8

Beat the egg albumen to foam, allow this to become liquid again by standing, and then add to it a solution of the two salts in the water. Set the liquid aside for two days in a cool and dark place, and filter.

This preparation must be kept in the dark. It contains 1 per cent. of mercuric chlorid.—Germ. Form.

A preparation containing 5 p. c. of mercuric chlorid may be made by using 975 gr. of fresh egg-white, 195 grains of mercuric and sodium chlorids, and 6½ fluidounces of distilled water.

Solution of Mercuric and Ammonium Chlorid. (Van Swieten's Solution or Liquor.)

Mercuric chloridgr. 7½
 Ammonium chloridgr. 15
 Alcoholfl.dr. 2
 Orange flower water.....fl.oz. 8
 Distilled water, to make....fl.oz. 16

Dissolve the salts in 1½ fluidounces of water, and add the other ingredients.

This solution should be kept in dark or amber-colored bottles.—Cinc. Acad. Pharm.

See also Solution of Mercury Chlorid, No. II.

Solution of Mercury Chlorid. (Solution of Mercury Perchlorid or Bichlorid.)

I. Brit. Pharm.:

Mercuric chloridgr. 2
 Distilled waterfl.oz. 4
 Dissolve.

II.

Mercuric chloridgr. 2
 Ammonium chloridgr. 2
 Distilled waterfl.oz. 4

—Eclectic (from Brit. Pharm. 1885).

These solutions contain 1/16 gr. of mercuric chlorid in each fluidram.

Solution of Mercuric Nitrate. (Acid Solution of Nitrate of Mercury.)

Red mercuric oxidav.oz. 4
 Nitric acidav.oz. 4½
 Distilled waterav.oz. 1½

Mix the acid with the water, and dissolve the oxid in the mixture.—U. S. P.

Keep the product in glass-stoppered bottles.

The product contains about 60 p. c. of mercuric nitrate, with about 11 p. c. of free nitric acid.

Acid Solution of Mercuric Nitrate of the Brit. Pharm. contains about same amount of mercuric nitrate as the above but is considerably more acid, being prepared from 4 av.ounces of mercury, 5 fluidounces of nitric acid and 11½ fluidrams of distilled water. Mix the acid with the water in a flask, dissolve the mercury in the mixture without the application of heat, boil gently for 15 minutes, allow to cool, and preserve the solution, which should weigh about three times as much as the mercury employed, in a stoppered bottle not exposed to light (an amber bottle will suffice).

Solution of Mercury Peptonate.

Mercuric chlorid, pure.....gr. 18
 Peptone, dry (free from salt).gr. 54
 Sodium chloridgr. 14
 Distilled watersufficient

Dissolve the mercury salt in 6 fluidrams of the water and mix this with a solution of the peptone in 3 fluidrams of the water. After one hour, collect the precipitate on a filter, allow it to drain, add it to a solution of the sodium chlorid in 2 fluidounces of the water, and when dissolved add enough water to make 4 fluidounces.—Germ. Form.

This contains 1 p. c. by weight of mercuric chlorid.

Solution of Mercury and Potassium Iodid. (Solution of Potassium Iodohydrargyrate — Channing's Solution.)

Red mercuric iodid.....gr. 9
Potassium iodidgr. 7
Distilled waterfl.oz. 2
Dissolve the salts in the water.—N. F.

Solution of Morphine Acetate.

I.
Morphine acetategr. 9
Acetic acid, diluted.....m. 20
Alcoholfl.dr. 4
Distilled waterfl.dr. 12
—Brit. Pharm.

II. Eclectic (from Brit. Pharm. 1885):

Morphine acetategr. 4
Distilled waterfl.oz. 4
Diluted acetic acid.....m. 5

Solution of Morphine Citrate.

Morphine (alkaloid)gr. 32
Citric acidgr. 27
Cochinealgr. 1
Alcoholfl.dr. 2
Distilled water, to make....fl.oz. 2
Triturate the solids with the alcohol and 1½ fluidounces of water, filter, and pass the remainder of the distilled water through the filter.

This solution should not be kept on hand, but prepared only when required.

Each fluidram contains 2 gr. of morphine in the form of citrate.—N. F.

Solution of Morphine Hydrochlorid. (Solution of Morphine Muriate.)

I.
Morphine hydrochloridgr. 9
Hydrochloric acid, diluted....m. 20
Alcoholfl.dr. 4
Distilled waterfl.dr. 12
—Brit. Pharm.

II. Eclectic:

Morphine hydrochloridgr. 4
Distilled waterfl.oz. 4
Diluted hydrochloric acid.....m. 5

Solution of Morphine, Magendie's. (Hypodermic Solution of Morphine.)

Morphine sulfategr. 32
Salicylic acidgr. 1
Distilled water, warm.....fl.oz. 2

Dissolve the morphine and acid in the warm distilled water and filter the solution through a small pellet of absorbent

cotton. When the solution is cold, pass a small amount of distilled water through the cotton, if necessary, to make the liquid measure 2 fluidounces.

Keep the solution in well-stoppered vials, in a dark place.

Particular care should be taken in dispensing and labeling this solution so that it may not be mistaken for the Solution of Morphine, U. S. P. 1870, containing only 1 gr. of morphine sulfate in each fluidounce, which is still used in some parts of this country.

The addition of salicylic acid as a preservative is an innovation, intended to give stability to the solution if it is to be kept in stock. It may be omitted if the solution is prepared for immediate use.—N. F.

Other preservatives recommended for hypodermic solutions are chloroform water instead of distilled water, a small amount of benzoic acid, or about 5 grains of boric acid to a fluidounce of solution.

Solution of Morphine Meconate. (Solution of Morphine Bimeconate.)

Morphine meconategr. 22
Alcoholfl.dr. 8½
Comp. tincture of cudbear....m. 15
Distilled water, to make....fl.oz. 4

Dissolve the morphine salt in 4 fluidounces of water, add the alcohol, the tincture, and enough water to make 4 fluidounces.

Each fluidounce contains 5½ grains of morphine meconate, or 22 minims (about 66 drops from a dropper) contains ¾ gr. of the salt.

This solution is about as strong as tincture of opium U. S. P. by measure and two-thirds as strong by the dropper.—Cinc. Acad. Pharm.

This is similar to the Solution of Morphine Bimeconate of the Brit. Pharm. 1885 (not in 1898), which, in simplified or modified form, is as follows:

Morphine (alkaloid)gr. 13½
Meconic acidgr. 12
Alcoholfl.oz. 1
Distilled water, to make....fl.oz. 4

Add the morphine and acid to the alcohol, then add the water, dissolve by agitation, and filter through white paper.

Solution of Morphine Sulfate.

Morphine sulfategr. 1
Distilled waterfl.oz. 1

—U. S. P. 1870 and Eclectic.

This solution should not be confounded with the solution of morphine of the N. F. or what is commonly known as Magendie's Solution.

Solution of Morphine Tartrate.

Morphine tartrategr. 18
Alcoholfl.oz. 1
Distilled water, to make....fl.oz. 4

Dissolve the morphine salt in the alcohol mixed with an equal volume of the water, then add the remainder of the water.—Brit. Pharm.

Solution of Opium, Compound or Squibb's. (Liquor Opii Compositus.)

Squibb's formula is

Depurated solut'n of opium..fl.dr. 14
(equal to 20 gr. of morphine sulfate)
Alcoholfl.dr. 13
Chloroformfl.dr. 1
Acetic etherfl.dr. 2

The depurated solution of opium is a preparation made practically like deodorized tincture of opium.

The above is the formula given in 1870. The solution of opium for the above is now stated to contain 25½ gr. of morphine.

This is not to be confounded with Squibb's diarrhea mixture; see Mixtures, Cholera.

Solution of Opium, Sedative. (Battley's Sedative Liquid or Drops.)

The formula usually employed is similar to, or the same as, the following from Cooley:

Extract of opium.....gr. 132
Alcoholfl.dr. 5
Water, to make.....fl.oz. 4

Dissolve the extract in hot water, allow to cool, add the alcohol and the remainder of the water, and filter.

Solution, Pancreatic. (Liquor Pancreaticus.)

I.

Pancreatin (U. S. P.).....gr. 128
Sodium bicarbonategr. 360
Glycerinfl.oz. 4
Comp. spirit of cardamom..fl.dr. 4
Alcoholfl.dr. 4
Purified talcumgr. 120
Water, to make.....fl.oz. 16

Triturate the pancreatin and the sodium bicarbonate gradually with 10 fluidounces of water; add the alcohol, compound spirit of cardamom and talcum; mix them thoroughly by shaking, and pour the mixture upon a wetted filter, returning the first portions of the filtrate, until it runs off clear. Wash the filter with enough water to obtain 12 fluidounces of filtrate. To this add the glycerin.

Each fluidram represents 1 grain of pancreatin (U. S. P.).—N. F.

Tests for pancreatin are mentioned under Powder, Peptonizing, which see.

II.

Pancreas, freshav.oz. 4½
Glycerinfl.oz. 1
Alcoholfl.oz. 1
Waterfl.oz. 12

Mix the pancreas, previously comminuted, with the liquids, macerate for several weeks, frequently shaking, and finally strain.

The liquid portion may be used as soon as the red blood color has disappeared.

III.

Macerate 5 av.ounces of pancreas, freed from fat and external membrane and finely divided by trituration with washed sand or powdered pumice, in a closed vessel with 19¼ fluidounces of 20 p. c. alcohol (4 fluidounces of U. S. P. alcohol and 15¼ of water) for 7 days, and filter.—Brit. Pharm.

Solution of Pepsin. (Liquid Pepsin.)

Glycerite of pepsin.....fl.dr. 6
Hydrochloric acidm. 75
Glycerinfl.oz. 5
Water, to make.....fl.oz. 16

Mix the glycerite, acid, and glycerin, add the water, mix well, and filter after

standing a convenient time, if necessary.
—N. F. and U. S. P. 1880.

Solution of Pepsin, Aromatic. (Aromatic Liquid Pepsin.)

Pepsin (U. S. P. or 1:3000).....	gr. 128
Oil of cinnamon.....	drops 2
Oil of pimento.....	drops 2
Oil of clove.....	drops 4
Purified talcum	gr. 120
Alcohol	fl.dr. 4
Hydrochloric acid	m. 75
Glycerin	fl.oz. 4
Water, to make.....	fl.oz. 16

Mix the pepsin with 8 fluidounces of water and the acid, and shake the mixture frequently until the pepsin is dissolved. Then add the talcum and oils, previously dissolved in the alcohol; mix the whole thoroughly, by agitation, and filter it through a wetter filter, returning the first portions of the liquid until it runs through clear. Pass enough water through the filter to make the filtrate measure 12 fluidounces. To this add the glycerin.

Each fluidram represents 1 gr. of Pepsin (U. S. P.).—N. F.

Solution of Pepsin, Compound.

Pepsin, pure (scale).....	gr. 80
Diluted hydrochloric acid.....	fl.dr. 2
Glycerin	fl.dr. 4
Spirit of wintergreen.....	m. 80
Aromatic elixir	fl.oz. 1
Water, to make.....	fl.oz. 4

—N. Y. Hospitals.

Solution of Peptonate of Iron.

See Solution of Iron Peptonate.

Solution of Peptonate of Iron and Manganese.

See Solution of Iron Peptonate with Manganese.

Solution (Test) of Phenolphthalein.

Dissolve 1 gm. of phenolphthalein in 50 cc. of alcohol and dilute to 100 cc. with water. About 3 drops are sufficient for 50 cc. of the solution to be titrated; it gives a red color to alkali hydroxids or carbonates, while acids render the solution colorless. It may be employed in hot titrations. It is not suitable as an indicator for ammonia, but is largely used for organic acids, alkali hydroxids

and for carbonates and bicarbonates in boiling solutions.—U. S. P.

Solution of Phosphorus. (Thompson's Solution of Phosphorus.)

Phosphorus	gr. 1
Absolute alcohol	fl.dr. 83/4
Spirit of peppermint (U.S.P.).....	m. 10
Glycerin	fl.oz. 2

Dissolve the phosphorus in 1 fluidounce of absolute alcohol, in a stoppered vial or test-tube, by immersion in a water bath and frequent agitation, taking care that any loss of alcohol, by evaporation, be made up from time to time. Allow the solution to become nearly cold, and then add to it the remainder of the absolute alcohol and the glycerin, previously mixed and slightly warmed. Finally add the spirit of peppermint.

Keep the solution in a well-stoppered bottle, in the dark.

Each fluidram contains about 1/24 gr. of phosphorus.

This solution must not be confounded with spirit of phosphorus, which is not intended to be administered as such, but is only to be used in compounding the elixir or other preparations of phosphorus.

The phosphorus should be perfectly translucent, cut and weighed under water, and quickly dried with filtering paper before being dropped into the alcohol.—N. F.

Solution of Potassa. (Solution of Potassium Hydroxid, U. S. P. 1900—Solution of Caustic Potash Kali Lauge.)

Potassa (i. e., purified caustic potassa)	av.oz. 1
Distilled water, to make....	fl.oz. 16

The potassa should be of the full strength (85 per cent.) and quality directed by the U. S. P. Potassa of any other strength, however, may be used if a proportionately larger or smaller quantity be taken.

This solution should be kept in bottles made of green glass and provided with glass stoppers coated with paraffin or petrolatum.—U. S. P.

The product is an aqueous solution of potassium hydroxid containing about 5 per cent. of this compound.

In the U. S. P. 1890, this preparation was directed to be made by interaction between lime (calcium oxid) and potassium bicarbonate as follows:

Potassium bicarbonategr. 640
Limegr. 300
Distilled watersufficient

Dissolve the potassium salt in 7 fluid-ounces of distilled water, heat the solution until effervescence ceases, and then increase the heat to the boiling point of the liquid. Slake the lime with about 3 fluidrams of distilled water, mix this with 7 fluidounces of distilled water, pour the mixture into a tared flask, and, having heated it to boiling, gradually add to it the solution of potassium bicarbonate, and boil during 10 minutes. Then add enough distilled water to make the liquid weigh 16½ av.ounces (measuring about 16 fluidounces), set the flask aside, well stoppered, until the contents are cold. Lastly, strain the liquid through linen, set it aside in a well-stoppered bottle until it has become clear by subsidence, and separate the clear solution by decantation or by means of a siphon.

This preparation may also be made in the cold, first heating the bicarbonate as in the above, slaking the lime, adding distilled water to each, mixing them in a bottle, adding enough of the water to make the proper weight, allowing to stand for several days, agitating frequently, then clarifying like the above.

The preparation of the Brit. Pharm. contains approximately 5 per cent. of potassium hydrate, that of the Germ. Pharm. 15 per cent.

Solution of Potassium Acetate. (Liquor Kali Acetici.)

I.

Acetic acid, 36 p. c.fl.oz. 10¾
Potassium bicarbonate,
Distilled water, each.sufficient

To the acid add 2¼ fluidounces of water, add gradually 6½ av.ounces of potassium bicarbonate, heat the liquid to

boiling, then neutralize by the further addition of the potassium salt, and then add enough water to produce a liquid of a sp. gr. between 1.176 and 1.180.—Germ. Pharm.

II. (Also called Solution of Kali Acetate):

Potassium acetategr. 183
Distilled waterfl.oz. 4

—Homeopathic.

This is a 1x solution. Dilutions are to be made from this with distilled water. See Dilutions, Homeopathic.

All preparations of this salt should be freshly made as required.

Solution of Potassium Arsenate and Bromid. (Solution of Arsenic Bromide — Clemens' Solution — Liquor Arsenic Bromidi.)

Arsenous acid, pure.gr. 73
Potassium bicarbonategr. 294
Bromingr. 118
Distilled water, to make...fl.oz. 16

Boil the acid with the potassium bicarbonate, and 4 fluidounces of water, until solution is effected. Allow this to cool, add 8 fluidounces of water, then the bromin, and afterwards enough water to make 16 fluidounces. Let the mixture stand a few hours, agitating it occasionally, then filter.

This solution contains an amount of arsenic in combination, corresponding to 1 per cent. of arsenous acid.

The title "solution of arsenic bromid," which is often applied to Clemens' solution or similar preparations, is a misnomer, since arsenic bromid cannot exist, as such, in presence of water, but is split up into hydrobromic and arsenous acids. The proportions of the ingredients, in the formula above given, have been adjusted, as closely as practicable, so as to yield definite compounds, viz., arsenate and bromid of potassium.

In order to prevent injury to the balances by weighing a definite amount of bromin, the plan suggested under Solution of Bromin may be applied to this preparation, viz., to prepare such a quantity of the latter at one time, as will be

commensurate to the actual contents of an original vial of bromin.—N. F.

Solution of Potassium Arsenite.
(Fowler's Solution—Liquor Arsenicalis—Arsenical Solution—Liquor Kali Arsenicosi—Solutio Arsenicalis Fowleri.)

I.

Arsenous acidgr. 70
Potassium bicarbonategr. 140
Comp. tincture of lavender...gr. 210
Distilled water, to make..av.oz. 16

The arsenous acid (arsenic trioxid or arsenous oxid) should be rubbed to fine powder, then boiled with the potassium bicarbonate, in a tared dish, with about 1½ fluidounces of water until dissolved, then add enough water so that with the tincture the whole will weigh 16 av. ounces, and filter through paper.—U. S. P.

The product contains 1 per cent. by weight of arsenous acid.

In the U. S. P. 1890 this preparation was made up to a certain quantity by volume, viz., 73 gr. of arsenous acid, 146 gr. of potassium bicarbonate, 4 fluidrams of compound tincture of lavender, and enough distilled water to make 16 fluidounces.

The arsenous acid used should be the pure, not the ordinary commercial variety in powder form.

The preparation of the Brit. Pharm. is of the same strength of arsenic but is made with 73 grains of potassium carbonate instead of the bicarbonate.

The preparation of the Germ. Pharm. differs from that of the Brit. Pharm. in that 16 fluidounces contain 7 fluidrams of spirit of lavender and 14 of alcohol.

II. Solution of Kali Arsenite:

This is prepared like the U. S. P. solution but omitting the compound tincture of lavender, and adding 6½ fluidrams of alcohol to the solution before adding the full amount of water.—Homeopathic.

This makes a 2x solution, from which dilutions are to be made with dispensing alcohol. See Dilutions, Homeopathic.

Solution of Potassium Bromid. (Solution of Kali Bromid.)

Potassium bromidgr. 183
Distilled waterfl.oz. 4
—Homeopathic.

This makes a 1x solution. Dilutions: 2x is to be made from this with diluted alcohol; 3x is to be made with dispensing alcohol. See Dilutions, Homeopathic.

Solution of Potassium Carbonate.

Potassium carbonateav.oz. 10
Waterfl.oz. 17¼
Dissolve, filter, and dilute the liquid with water to the density of 1.330 to 1.334.—Germ. Pharm.

Solution of Potassium Chlorate. (Solution of Kali Chlorate.)

Potassium chlorategr. 73
Distilled waterfl.oz. 16
Mix and dissolve.—Homeopathic.

This makes a 2x solution. Dilutions: 3x is to be made with diluted alcohol; 4x and higher are to be made with dispensing alcohol. See Dilutions, Homeopathic.

Solution of Potassium Citrate. (Mixture of Potassium Citrate.)

Potassium bicarbonategr. 146
Citric acidgr. 110
Water, to make.....fl.oz. 4

Dissolve the bicarbonate and acid each in 1½ fluidounces of water, filter each separately, add enough water through each filter to make each filtrate measure 2 fluidounces, then mix the solutions, and when effervescence ceases transfer the liquid to a bottle.—U. S. P.

This preparation should be freshly made when wanted. However, if the preparation is used very much, the two solutions (acid and bicarbonate) may be kept on hand and mixed as required.

The product is an aqueous liquid containing about 9 per cent. of anhydrous potassium citrate, together with small amounts of citric and carbonic acids. If a similar solution of potassium citrate is desired without the two acids, it may be prepared extemporaneously by dissolving 200 grains of potassium citrate

in enough distilled water to make 4 fluidounces.

The preparation of the U. S. P. 1880, known as "mixture of potassium citrate," was similar to the above. See Mixture of Potassium Citrate.

Solution of Potassium Dichromate.
(Solution of Kali Bichromate.)

Potassium bichromategr. 183
Distilled waterfl.oz. 4

—Homeopathic.

This makes a 1x solution, from which dilutions are to be made with distilled water. See Dilutions, Homeopathic.

All preparations of this salt should be kept but a limited period of time.

Solution of Potassium Permanganate.
(Condy's Fluid—Liquor Kali Hypermanganici.)

I.

Potassium permanganate....gr. 64
Distilled waterfl.oz. 16
Mix and dissolve.

Preserve the solution in a glass or rubber-stoppered bottle.—U. S. P. 1870.

II.

Potassium permanganate....gr. 73
Distilled waterfl.oz. 16
—Brit. Pharm.

III.

Potassium permanganate...av.oz. 1
Distilled waterfl.oz. 9
—Eclectic.

Solution of Saccharin.

Saccharingr. 128
Sodium bicarbonategr. 64
Alcoholfl.oz. 1
Water, to make.....fl.oz. 4

Dissolve the saccharin and the sodium bicarbonate in 2½ fluidounces of water, filter the solution, add the alcohol to the filtrate, and pass enough water through the filter to make 4 fluidounces.—N. F.

This preparation is intended for sweetening liquids or solids when the use of sugar is objectionable or when a sweet taste is to be imparted to a liquid without increasing its density. It is similar to Elixir of Saccharin, which see.

Solution (Salicylated) of Iron.

See Solution of Iron, Salicylated.

Solution, Salt or Saline, Normal or Physiological. (Therapeutic Salt Solution—Also called "Artificial Serum.")

"Normal salt solution" is used for intravenous injection. When properly prepared it contains 0.6 to 0.75 per cent. of sodium chlorid, or 45 to 56 grains in 16 fluidounces of solution, the solvent being sterilized distilled water. Very frequently it is made from an even teaspoonful of salt and 16 fluidounces of water. A good proportion, and one that should be adhered to, is a dram (60 gr.) to the pint. Drs. Locke and Hare have devised the following:

Potassium chloridgr. ¾
Calcium chloridgr. 2
Sodium chloridgr. 65
Sterilized distilled water, to makefl.oz. 16

Before use, the solution should be warmed to 38 deg. C. The dose is 1 pint to 1 quart.

Solution, Seiler's.

See Solution, Antiseptic, Seiler's.

Solution of Silver Nitrate. (Solution of Argentum Nitrate.)

Homeopathic:

1x is to be made with distilled water (46 grains to 1 fluidounce). See Solutions, Homeopathic.

Dilutions are to be made from this with distilled water. See Dilutions, Homeopathic.

Preparations of this salt should be kept in glass-stoppered bottles.

Solution of Soap.

See Soap, Surgical.

Solution of Soda. (Solution of Sodium Hydroxid, U. S. P. 1900—Solution of Caustic Soda.)

Soda (i. e., purified caustic soda)av.oz. 1
Distilled water, to make....fl.oz. 16

The soda should be of the full strength (90 per cent.) and quality directed by the U. S. P. Soda of any other strength, however, may be used if a proportionately larger or smaller quantity be taken.

This solution should be kept in bottles

made of green glass and provided with glass stoppers coated with paraffin or petrolatum.—U. S. P.

The product is an aqueous solution of sodium hydroxid containing about 5 per cent. of this compound. The preparation of the Germ. Pharm. contains 15 per cent.

In the U. S. P. 1890 this solution was directed to be prepared like Solution of Potassa (which see) by interaction between lime (calcium oxid) and crystal sodium carbonate, using 375 grains of lime and 1,280 grains of pure crystal sodium carbonate to make 16 fluidounces of solution.

Solution of Sodium Arsenate.

Sodium arsenate, exsiccated...gr. 20
Distilled waterav.oz. 4½
Mix and dissolve.—U. S. P.

The product is an aqueous solution containing not less than 1 per cent. of exsiccated sodium arsenate.

In the U. S. P. 1890 this preparation was made up to a certain quantity by volume, viz., 18½ grains of dried sodium arsenate and enough distilled water to make 4 fluidounces. This is also the formula of the Brit. Pharm.

Solution of Sodium Arsenate, Pearson's.

Solution arsenate, perfect
crystalsgr. 12
Distilled waterfl.oz. 16
Dissolve the sodium arsenate in the

water, and filter, if necessary.

This preparation may also be prepared as follows:

Solution of sodium arsenate
(U. S. P.)fl.oz. 1
Distilled waterfl.oz. 9

Mix the solution of sodium arsenate with the water.

This solution contains about 1/10 per cent. of anhydrous sodium arsenate, and each fluidram contains about 1/10 gr. of crystal sodium arsenate.

This preparation should not be confounded with the solution of sodium arsenate U. S. P., which is ten times stronger than the above preparation.

Pearson's Solution is recognized in the Codex, under the title *Solutè d'Arsenate de Soude* (or *Solution Arsenicale de Pearson*). It is recommended that Pearson's Solution be dispensed only when expressly designated as "Pearson's."—N. F.

Solution of Sodium Borate, Compound. (Dobell's Solution.)

Sodium borategr. 240
Sodium bicarbonategr. 240
Carbolic acid, crystallized...gr. 48
Glycerinfl.dr. 9
Water, to make.....fl.oz. 32

Dissolve the salts in about 16 fluidounces of water, then add the glycerin, and the acid previously liquefied by warming, and lastly, enough water to make 32 fluidounces, and filter.—N. F.

Solution of Sodium Carbolate or Phenate.

I.

Caustic soda (U. S. P.)....gr. 22
Carbolic acid, crystal.....gr. 310
Waterfl.dr. 5

Dissolve the soda in the water, add the acid, and warm gently, until it is dissolved.—N. F.

This preparation should be made freshly when wanted for use, and should be preserved from the air. It is miscible in all proportions with water and alcohol.

This formula is based upon that of the 1st Germ. Pharm. (is not in the present edition).

II. What may sometimes be desired under the name "solution of sodium carbonate" or "phenol sodique" is the Codex preparation, which is as follows:

Carbolic acid, crystal.....gr. 510
Caustic soda, pure.....gr. 220
Distilled water, to make...fl.oz. 16

Dissolve the soda in 10 fluidounces of the water, add the acid, mix well, and add the remainder of the water.

This is much weaker than the preceding.

III. Still another preparation that may be desired under the name "phenol sodique" is the following (by Berlinger):

Coal tar.....av.oz. 2..gr. 90
 Caustic soda, pure.....gr. 120
 Water, to make.....fl.oz. 16

Dissolve the soda in 4 fluidounces of water, warm, add the tar and thoroughly agitate for a few minutes. Then add the remainder of the water, set aside in a covered vessel in a warm place for several days, shaking frequently. Decant and filter, washing the residue with enough water to bring the finished preparation to the measure of 16 fluidounces.

Solution of Sodium Chlorid. (Solution of Natrum Muriate.)

Sodium chlorid, pure.....gr. 183
 Distilled waterfl.oz. 4
 —Homeopathic.

This makes a 1x solution. Dilutions: 2x is to be made from this with distilled water; 3x is to be made with diluted alcohol; 4x and higher are to be made with dispensing alcohol. See Dilutions, Homeopathic.

Solution of Sodium Citrate. (Mistura Sodii Citratis—Saturation—Potio Riveri—Saturatio—Saturatio Riveri—River's Potion or Draught.)

Citric acidgr. 145
 Sodium bicarbonategr. 180
 Distilled waterfl.oz. 16

Dissolve the citric acid in the water contained in a bottle, add the sodium bicarbonate, in divided portions, dissolve it by agitation, and immediately stopper the bottle securely.

This preparation should be freshly prepared when wanted for use.—N. F.

The Germ. Pharm. directs that, when "Saturatio" is prescribed, without any specification of the ingredients or strength, Potio Riveri, represented here by the above, be dispensed.

The directions of the Germ. Pharm. are to use 154 grains of citric acid to 16 fluidounces of distilled water and 346 grains pure sodium carbonate.

Solution of Sodium Citro-Tartrate, Effervescent. (Tartro - Citric Lemonade—Effervescent Solution of Sodium Tartrate.)

Sodium bicarbonategr. 380
 Tartaric acidgr. 350
 Citric acidgr. 30

Syrup of citric acid.....fl.oz. 1½
 Water, to make.....fl.oz. 11½

Dissolve 350 grains of sodium bicarbonate in 8 fluidounces of water, add the two acids, and, when they are dissolved, the syrup of citric acid. Filter the solution into a strong bottle of about 12 fluidounces capacity, and pass enough water through the filter to make the filtrate measure 10½ fluidounces. Dissolve the remainder of the sodium bicarbonate in 1 fluidounce of water, filter the solution, pour it on top of the solution in the bottle, which close immediately with a cork, and secure it with twine. Then shake the bottle.—N. F.

This is used as an efficient substitute for solution of magnesium citrate.

The so-called "citrate of magnesia bottle" is to be used as a container for this preparation.

Solution of Sodium Ethylate.

Sodium metal, clean and brightgr. 23
 Absolute alcoholfl.oz. 1

Cautiously dissolve the sodium in the alcohol contained in a flask, the latter being kept cool by a stream of cold water.

The solution should be recently prepared, as it absorbs moisture from the atmosphere, which decomposes the compound C_2H_5ONa , of which it contains 18 per cent.—Brit. Pharm.

It is used as a depilatory.

Solution of Sodium Nitrate, Rademacher's. (Saltpeter Tropfen—St. Peter's Tropfen.)

Sodium nitrate, pure.....av.oz. 6
 Distilled waterfl.oz. 11½
 —H. and D.

While the above is known as "liquor natri nitrici," the following is given for "solutio natri nitrici Rademacheri" (in H.):

Sodium nitrategr. 120
 Bismuth subnitrategr. 15
 Acaciaav.oz. ½
 Distilled waterfl.oz. 8

Solution of Sodium Oleate.

Castile soap, white, dry and powderedgr. 480
 Water, to make.....fl.oz. 16

Mix the soap with 4 fluidounces of water so as to produce a uniform and gelatinous mixture. Then add 10½ fluidounces more of water, apply heat until the soap is dissolved, allow the liquid to cool and add enough water to make it measure 16 fluidounces.—N. F.

This solution is intended to be used in the preparation of oleates.

Solution of Sodium Phosphate, Comp. (Concentrated Solution of Sodium Phosphate—Liquefied Sodium Phosphate—Solution of Sodium Citrico-Phosphate.)

I.

Sodium phosphate (selecting only transparent or unfloresced crystals)av.oz. 16
Sodium nitrategr. 280
Citric acidgr. 910
or av.oz. 2, gr. 35
Distilled water, to make...fl.oz. 15½

Triturate the sodium phosphate and nitrate in a mortar with the citric acid until completely liquefied, then add enough water to make 15½ fluidounces, and filter.—U. S. P.

Keep the solution in well-stoppered bottles in a moderately warm place.

Most of the commercial concentrated solution of sodium phosphate contain sodium nitrate like the above; the following does not contain it.

II.

Sodium phosphate (selecting only transparent crystals)av.oz. 16
Citric acidav.oz. 3¾

Triturate together intimately, then heat gently on a water bath until liquefied, and strain through a pellet of cotton if necessary. The above makes a total of about 12½ fluidounces.—Cinc. Acad. Pharm.

Each fluidram of the liquid represents about 75 gr. of crystal sodium phosphate and about 85 gr. of total solids.

This preparation will crystallize at 15 deg. C., but will readily liquefy again on warming. It is miscible with water or syrup in all proportions.

Solution of Sodium Salicylate.

The following forms a 50 per cent.

(1 gr. in 2 minims) aqueous solution which is convenient for dispensing purposes:

Salicylic acidav.oz. 7¼
Sodium bicarbonateav.oz. 4½
Distilled water to make...fl.oz. 16

Stir together until dissolved, and filter.

Solution of Sodium Stearate.

Edel's formula:

Potassa (pure caustic pot-ash)gr. 143
Stearic acid, pure.....gr. 897
Alcoholfl.oz. 3
Distilled water to make...fl.oz. 64

Dissolve the potassa in 1 fluidounce of alcohol, the acid in the remainder of the alcohol by the aid of a gentle heat, adding a little more alcohol if necessary, heat the potassa solution, add the acid solution, stir constantly till cool, and then add the water previously heated to about 80 deg. C.

Solution of Strontium Bromid.

A solution of this strength is used:

Strontium bromid, pure....gr. 480
Distilled water to make...fl.oz. 8
Dissolve and filter.

Solution of Strontium Lactate.

A solution of this strength is used:

Strontium lactate, pure....gr. 480
Distilled water to make...fl.oz. 8
Dissolve and filter.

Solution of Strychnine.

Strychnine (alkaloid).....gr. 4
Diluted hydrochloric acid..sufficient
Distilled waterfl.dr. 10
Alcohol to make.....fl.dr. 20

Dissolve the strychnine in the water with the aid of a small amount of the acid, then add the alcohol.—Eclectic.

See Solution of Strychnine Hydrochlorid, which is similar.

Solution of Strychnine Acetate. (Hall's Solution of Strychnine.)

Strychnine acetategr. 4
Diluted acetic acid (U. S. P.)fl.dr. 1
Alcoholfl.oz. 1
Compound tincture of cardamomm. 20
Distilled water, to make...fl.oz. 4

Dissolve the strychnine acetate in

about 2 fluidounces of water mixed with the acid, then add the alcohol, tincture, and lastly, enough water to make 4 fluidounces. Allow the mixture to stand a few days, if convenient, and filter.

Each fluidram contains $\frac{1}{8}$ gr. of strychnine acetate.—N. F.

The Brit. Pharm. directs a Liquor Strychninæ Hydrochloratis (with synonym: Liquor Strychniæ) which is much stronger, and should not be confounded with the above preparation. It should never be dispensed, unless expressly designated. See Solution of Strychnine Hydrochlorid.

Solution of Strychnine Hydrochlorid.
(Liquor Strychninæ—Solution of Strychnine.)

Strychnine (alkaloid)	gr. 18
Diluted hydrochloric acid.....	drops 36
Alcohol	f.dr. 6
Distilled water	f.oz. 3

Dissolve the strychnine in the water with the aid of the acid, and then add the alcohol.—Brit. Pharm. 1885.

The Brit. Pharm. 1898 directs 18 gr. of strychnine hydrochlorid, 1 fluidounce of alcohol, and 3 fluidounces of distilled water.

See also Solution of Strychnine.

Each fluidram contains $\frac{3}{5}$ gr. of strychnine.

See also Solution of Strychnine Acetate.

Solution of Strychnine Nitrate.

Strychnine (alkaloid)	gr. 16
Nitric acid	m. 25
Distilled water	f.oz. 4

Mix and agitate until dissolved.—Eclectic.

Solution of Sulfurated Lime. (Solution of Sulfuret of Lime—Solution of Oxysulfuret of Calcium—Vlemminck's Solution or Lotion.)

Lime, freshly slaked.....	av.oz. 2
Sublimed sulfur	av.oz. 3
Water, to make.....	av.oz. 12

Mix the slaked lime with the sulfur, and add the mixture gradually to 20 fluidounces of boiling water. Then boil the whole, under constant stirring, until it is reduced to 12 av.ounces, strain, and

having allowed the solution to become clear by standing in a well-stoppered bottle, decant the clear brown liquid, and keep it in completely filled and well-stoppered bottles.—N. F.

Solution of Tar, Alkaline. (Bulkley's Solution of Tar.)

Pine tar	av.oz. 4
Caustic potassa	av.oz. 2
Water	f.oz. 9

Dissolve the potassa in the water. Shake the solution with the tar so that the latter may be dissolved, and strain the solution through muslin.—N. F.

Solution of Thymol.

Thymol	gr. 8
Alcohol	f.dr. $1\frac{1}{2}$
Glycerin	f.dr. $2\frac{1}{2}$
Water to make.....	f.oz. 16

Dissolve the thymol in the alcohol, add the other ingredients, and filter.—Eclectic.

Solution, Thyroid. (Liquor Thyroidi.)

Remove the external fat and connective tissue from thyroid glands taken from sheep immediately after killing; cut the glands across, and reject any that contain cysts, are hypertrophied, or are otherwise abnormal; count the healthy glands that remain; slice them and bruise them thoroughly in a mortar; for each entire gland (consisting of two lobes), add 33 minims of glycerin and 33 minims of $\frac{1}{2}$ per cent. solution of carbolic acid in distilled water, transfer the mixture, well stirred, to a flask, and close the neck of the latter with a plug of cotton; allow to stand for 24 hours; strain through linen, with strong pressure; and add to the strained liquid enough of a $\frac{1}{2}$ per cent. solution of carbolic acid in distilled water to make 96 minims of solution for each gland used.—Brit. Pharm.

The product is a pinkish, turbid liquid entirely free from any odor of putrescence. It must be freshly prepared and kept in well-stoppered, sterilized bottles.

Dose, 5 to 15 minims.

filter the solution into a bottle and add chlorin water, little by little, with frequent agitation, until the liquid acquires a permanent odor of chlorin; add zinc carbonate in small quantities at a time, with renewed agitation, until a brown sediment appears and the whole of the lead or iron is thus precipitated; filter the liquid, and evaporate to 16 fluid-ounces.—Brit. Pharm.

If no iron or lead be present in the liquid, filter the cooled product and evaporate it to 16 fluidounces.

Solution of Zinc and Iron, Compound. (Deodorant Solution.)

Zinc sulfate	av.oz. 14
Ferrous sulfate	av.oz. 14
Copper sulfate	av.oz. 4½
Betanaphthol	gr. 18
Oil of thyme	fl.dr. 1
Hypophosphorous acid, 30 per cent.	fl.dr. 2
Water, to make	gall. ½

Dissolve the zinc, ferrous and copper sulfates in 50 fluidounces of boiling water, add the naphthol and oil, and shake the mixture occasionally, in a stoppered bottle, until it is cold. Then add the acid, filter the liquid through a wetted filter, and lastly, pass enough water through the filter to make ½ gallon.—N. F.

This solution is used as a simple deodorant and antiseptic for common domestic use, when it is unnecessary or impracticable to employ more powerful agents.

When a deodorant solution is required for purposes where iron is objectionable, as for instance, when woven fabrics are to be steeped in it, Solution of Zinc and Aluminum, Compound, may be employed (which see).

Species. ("Teas"—Thee-Krauter— Theegemische.)

Species, commonly known as "teas," are mixtures of crude drugs in a coarsely comminuted state. The drugs must not be in large pieces nor must any fine powder be present.

Species, Alterative. (Swedish Blood- Purifying Tea—Compound Spe- cies of Guaiac—Species ad Decoc- tum Lignorum.)

Licorice root, cut	av.oz. 1
Saponaria, cut	av.oz. 2
Juniper wood, rasped	av.oz. 4
Guaiacum wood, rasped	av.oz. 6

—Swed. Pharm.

See also Species, Wood.

Species, Aromatic. (Aromatic Tea— Species Resolventes — Gewuerz- hafte Kraeuter.)

Peppermint, cut fine	parts 2
Wild thyme, cut fine	parts 2
Garden thyme, cut fine	parts 2
Lavender flower	parts 2
Clove, cut fine	part 1
Cubeb, coarse powder	part 1

—Germ. Pharm.

Species, Bitter. (Bitter Tea.)

I.

Wormwood, cut	parts 2
European centaury, cut	parts 2
Bitter orange peel, cut	parts 2
Buckbean, cut	part 1
Calamus, cut	part 1
Gentian, cut	part 1
Cassia bark, cut	part 3/10

—Austr. Pharm.

II.

Guaiac wood,	
Juniper berries,	
Buckbean leaves,	
Senna, each	equal parts

—Norw. Pharm.

III.

Juniper berries,	
Buchu,	
Senna, each	equal parts

—Dan. Pharm.

IV. The Swed. Pharm. has what it calls Boecker's Bitter Tea, also called Species Quassiæ Amaræ, which is prepared as follows:

Star-anise, crushed	part 1
Quassia, rasped	parts 2
Blessed thistle, cut	parts 2

Species, Diuretic. (Diuretic Tea— Harntreibender Thee.)

I.

Lovage root, cut,	
Restharrow root, cut,	
Licorice root, cut,	
Juniper berries, crushed,	
each	equal parts

—Germ. Pharm.

II. An older formula is this:

Licorice root, cut.....	parts 4
Lovage root, cut.....	parts 3
Rest harrow root, cut.....	parts 3
Pansy herb, cut.....	parts 3
Juniper berries, crushed....	parts 3
Parsley seed	parts 2
Anise seed	parts 2

—D.

Species, Emollient. (Emollient Cataplasm—Erweichende Kraeuter.)

Althea leaves,	
Mallow leaves,	
Melilot tops,	
German chamomile,	
Flaxseed, each.....	equal parts

Reduce them to a coarse powder, and mix it uniformly.

Mallow leaves are derived from *Malva vulgaris* Fries and *Malva sylvestris* Linné. Melilot tops are the leaves and flowering branches of *Melilotus officinalis* Desrousseaux, and *Melilotus altissimus* Thilliers.—N. F. and Germ. Pharm.

Species, Juniper. (Juniper Tea—Enbeaer The.)

Anise seed	part 1
Licorice root	part 1
Juniper berries	parts 8

—Norw. Pharm.

Species, Laxative. (St. Germain Tea—Species Laxantes—Laxative Tea.)

I.

Senna, cut	av.oz. 8
Elder flowers	av.oz. 5
Fennel, bruised	av.oz. 2½
Anise, bruised	av.oz. 2½
Potassium bitartrate, fine powder	av.oz. 2

Moisten the senna with a small quantity of water; then sprinkle over it, as uniformly as possible, the potassium bitartrate. When it has become dry, mix it lightly and uniformly with the other ingredients.—N. F., Germ. Pharm. (2nd) and Dan. Pharm.

The present Germ. Pharm. directs that the bruised anise and fennel be moistened with a solution of 1¼ av. ounces of potassium tartrate in 2½ fluidounces of water; in one-half hour, moisten them with a solution of ¾ av. ounce of tartaric acid in 6 fluidrams of

water, dry, and add the elder and senna.

II. The Norw. and Dan. (not the Swed.) Pharms. both recognize a "laxative species," also called "Hamburg tea." The former directs this mixture:

Senna, cut	parts 60
Manna	parts 25
Coriander, crushed.....	parts 8
Potassium bitartrate, powder	parts 7½

Mix the potassium bitartrate intimately with the manna and add the other ingredients.

The Dan. Pharm. directs a mixture of	
Senna	parts 62½
Manna	parts 25
Coriander	parts 7½
Potassium bitartrate	parts 5

The Dan. Pharm. also has the Laxative Species or Species St. Germain. See No. I.

Species, Long Life. (Species ad Longam Vitam.)

Aloes	parts 4
Rhubarb	part 1
Gentian	part 1
Zedoary	part 1
Galangal	part 1
Myrrh	part 1
Agaric	part 1
Spanish saffron	part 1
Theriac	part 1

Reduce the first seven ingredients to small pieces, then rub the agaric to coarse powder, triturate the theriac with it and mix the whole.—H.

Species, Marshmallow. (Marshmallow Tea—Species Althea.)

Marshmallow root, cut....	parts 10
Marshmallow leaves, cut....	parts 5
Licorice root, cut.....	parts 2½
Mallow flowers (<i>Malva sylvestris</i>), cut	part 1

—Austr. Pharm.

Species, Pectoral. (Breast Tea—Brust Thee—Bryst The—Species ad Infusum Pectorale.)

Althea root, peeled.....	parts 8
Coltsfoot leaves	parts 4
Licorice root, Russian, peeled	parts 3
Anise	parts 2
Mullein flowers	parts 2
Orris root	part 1
Cut, bruise and mix them.	

Pectoral Infusion, or Infusion of Pectoral Species, is made by infusing 480

grains of the above preparation, in the usual manner, so as to obtain 10 fluid-ounces of strained product.—N. F. and Germ. Pharm.

II.

Marshmallow leaves	parts 40
Licorice root	parts 30
Marshmallow root	parts 10
Barley	parts 10
Mullein flowers	part 1
Mallow flowers	part 1
Red poppy petals.....	part 1
Star anise	part 1

—Austr. Pharm.

III.

Anise seed	parts 2
Elder flowers	parts 3
Coltsfoot	parts 3
Licorice root	parts 6
Althea root	parts 6

—Norw. Pharm.

Species, Wood. (Species Lignorum
—Wood Tea — Blood-Purifying
Tea—Blutreinigung Thee—Holz
Thee.)

Guaiac wood	parts 5
Rest harrow	parts 3
Licorice root	part 1
Sassafras wood	part 1

Cut into coarse pieces and mix well.
 —Germ. Pharm.

See also Species, Alternative.

Spirits. ("Essences.")

The spirits of the U. S. P. are simply alcoholic solutions of volatile substances, such as volatile oils, camphor, etc. Many of them are known commonly as essences, although the latter term is also applied to some other preparations.

According to the N. F., any spirit or alcoholic solution of a volatile oil, for which no formula is given by the U. S. P., N. F. or other standard work, should be prepared in accordance with the following general formula:

Volatile oil	fl.oz. 1
Deodorized alcohol	fl.oz. 15

Dissolve the oil in the alcohol.

The strength of the spirit thus prepared is approximately 5 per cent. by weight, provided the specific gravity of the oil is in the neighborhood of 0.900, as is the case with the majority of volatile oils.

Spirit of (Bitter) Almond. (Essence of Bitter Almond.)

Oil of bitter almond.....	m. 80
Alcohol	fl.oz. 12½
Distilled water to make....	fl.oz. 16

Dissolve the oil in the alcohol and add the water.—U. S. P.

Spirit of Ammonia. (Dzondi's Spirit —Ammoniated Alcohol.)

Stronger (28 p. c. or so-called "concentrated") ammonia water	fl.oz. 8
Alcohol	sufficient

Pour the ammonia water into a flask provided with a safety funnel tube and connected with a glass condenser, the latter in turn to be connected with a well-cooled receiver containing 16 fluid-ounces of alcohol, the delivery tube of the condenser reaching to near the bottom of the receiver. Heat the flask carefully, and very gradually, to a temperature not exceeding 60 deg. C. and maintain it at that temperature until ammonia ceases to be evolved. Then disconnect the receiver and having ascertained the ammonia strength of the contents by the assay process, add enough alcohol to make the product contain 10 per cent. by weight of ammonia gas.—U. S. P.

Keep the product in glass-stoppered bottles in a cool place. The solution deteriorates and should be tested frequently.

The alcohol for this preparation should have been recently distilled and, after distillation, kept in glass vessels.

Spirit of Ammonia, Aromatic. (Compound Spirit of Ammonia—Spirit of Sal Volatile.)

I.

Ammonium carbonate, in hard, translucent pieces (not the white powder)...	gr. 250
Ammonia water, 10 p. c.	fl.oz. 1½
Oil of lemon	fl.dr. 1¼
Oil of lavender flowers.....	m. 8
	(about drops 12)
Oil of nutmeg.....	m. 8
	(about drops 12)
Alcohol	fl.oz. 11
Distilled water, to make....	fl.oz. 16

To the ammonia water, contained in a flask or bottle, add 2½ fluidounces of

water, and afterwards the ammonium carbonate reduced to moderately fine powder. Close the vessel and agitate the contents frequently until the salt is dissolved. Put the alcohol into another vessel, add the oils, then gradually add the solution of ammonium carbonate, and afterwards enough distilled water to make the product measure 16 fluid-ounces. Set the liquid aside during 24 hours in a cool place, occasionally agitating, then filter it through paper in a well-covered funnel.—U. S. P.

Keep the product in glass-stoppered bottles in a cool place.

It is best to let the mixture of ammonia water, ammonium carbonate and water stand for 24 hours before adding to the oil and alcohol mixture.

II.

Ammonium carbonate, translucent pieces	gr. 184
Strong solution of ammonia.....	f.dr. 6½
Oil of nutmeg	m. 27
Oil of lemon.....	m. 40
Alcohol	f.oz. 12
Distilled water	f.oz. 6

Place the two oils with the alcohol and distilled water in a retort; distil 14 fluidounces; then distil and separately collect an additional 7 fluidrams. Place the latter, together with the ammonium carbonate and the solution of ammonia, in a bottle holding rather more than 2 fluidounces, securely cork the bottle, and gently warm in a water bath to 60 deg. C., shaking from time to time until all the salt is dissolved. Filter the solution, when cold, through a pledget of cotton, and gradually mix the filtrate with the portion first distilled.—Brit. Pharm.

The strong solution of ammonia of the Brit. Pharm. is a concentrated ammonia water containing 32.5 p. c. of ammonia (sp. gr. 0.891), whereas the U. S. P. stronger ammonia water contains 28 p. c. of ammonia.

Spirit of Ammonia, Fetid.

Asafetida	av.bz. 1¼
Stronger ammonia water, 28 p. c.	f.dr. 15
Alcohol, to make.....	f.oz. 16

Break the asafetida into small pieces, macerate in a closed vessel with 12 fluid-ounces of alcohol for 24 hours, distil until alcoholic vapors cease to be condensed, mix the distillate with the ammonia water, and add the remainder of the alcohol.—Brit. Pharm.

Spirit of Angelica, Compound.

I.

Angelica root, cut moderately fine	av.oz. 2 .gr. 145
Valerian, cut moderately fine.....	gr. 250
Juniper berries, bruised.....	gr. 250
Alcohol	f.oz. 13
Water	f.oz. 18
Camphor	gr. 125

Macerate the roots and berries in the alcohol and water for 24 hours, agitating occasionally, then distil off 16 fluid-ounces, and dissolve the camphor in the distillate.—Germ. Pharm.

II. A simple formula is the following:

Oil of angelica root.....	m. 15
Oil of valerian.....	m. 5
Oil of juniper berries.....	m. 5
Camphor	gr. 150
Water	f.oz. 4
Alcohol	f.oz. 12

—H.

Spirit of Anise.

Oil of anise.....	f.dr. 13
Deodorized alcohol, to make.....	f.oz. 16

—U. S. P. and Brit. Pharm.

The spirit of anise, Brit. Pharm., is one-half the strength of the essence of anise of the Brit. Pharm. 1885.

Spirit, Apoplectic. (Slagvatten.)

This is a Scandinavian preparation made by distilling equal parts of rosemary and lavender flowers with dilute alcohol. Ordinarily spirit of lavender, which see, is dispensed. The gold leaf formerly added to it is not considered necessary.

Spirit, Aromatic.

Compound spirit of orange.....	f.oz. 1
Alcohol	f.oz. 15

Preserve the product, if it is to be kept in stock, in completely filled and well-stoppered vials or bottles, and stored in a cool and dark place.

Aromatic spirit may also be prepared in this manner:

Sweet orange peel, fresh and deprived of the white, inner portion	av.oz.	4½
Lemon peel, fresh.....	gr.	240
Coriander, bruised	gr.	240
Oil of star anise.....	m.	5
Alcohol, to make.....	fl.oz.	32

Macerate the solids during 4 days with 29 fluidounces of alcohol, then add the oil of star anise, filter, and pass enough alcohol through the filter to make the product measure 32 fluidounces.

When good, fresh essential oils cannot be readily obtained for preparing this spirit, the second formula may be used. But the product obtained by it should not be employed in mixtures containing iron, as the latter would cause a darkening of the mixture.—N. F.

Spirit of Cajuput.

Oil of cajuput.....	fl.dr.	13
Alcohol, to make.....	fl.oz.	16

—Brit. Pharm.

This preparation is 5 times the strength of the same preparation of the Brit. Pharm. 1885.

Spirit of Camphor. (Tincture of Camphor, U. S. P. 1850.)

Camphor	av.oz.	3¼
Alcohol, to make.....	fl.oz.	32

Dissolve the camphor in 12 fluidounces of alcohol, filter through paper, and pass the remainder of the alcohol through the filter.—U. S. P. and Brit. Pharm.

The formula of the U. S. P. 1880 (which is the formula of the Germ. Pharm.) directed 3 av.ounces of camphor, 24 fluidounces of alcohol and 6 fluidounces of water, the camphor to be dissolved in the alcohol, the water added, and the whole filtered.

The latter will serve for ordinary counter sales, but when the spirit is to be mixed in liniments with oils, chloroform, etc., the U. S. P. 1900 formula must be used, as it only makes a clear mixture.

The corresponding Eclectic and homoeopathic preparations are called tincture of camphor; see Tincture of Camphor.

Spirit of Caraway. (Tincture of Oil of Caraway—Essence of Caraway.)

Oil of caraway.....	fl.oz.	1
Alcohol	fl.oz.	11

—Eclectic.

Spirit of Cardamom, Compound.

Oil of cardamom.....	m.	15
Oil of caraway.....	m.	6
Oil of cinnamon, Cassia.....	m.	4
(about drops 6)		
Glycerin	fl.oz.	1
Alcohol	fl.oz.	8
Water, to make.....	fl.oz.	16

Dissolve the oils in the alcohol, add the glycerin, and lastly, enough water to make 16 fluidounces.

This preparation is intended as a flavoring ingredient, being equivalent to the official compound tincture of cardamom without the coloring matter.—N. F.

Spirit of Chloroform ("Chloric Ether"—Spirit of Chloric Ether.)

I.

Chloroform	fl.oz.	1
Alcohol	fl.oz.	15¾

—U. S. P.

The name "chloric ether" is often applied to this mixture.

II.

Chloroform	fl.dr.	6½
Alcohol, to make.....	fl.oz.	16

—Brit. Pharm.

III. A mixture of 1 volume of chloroform and 2 of alcohol has been called "concentrated chloric ether."

Spirit of Cinnamon.

Oil of cinnamon.....	fl.dr.	13
Alcohol, to make.....	fl.oz.	16

—U. S. P. and Brit. Pharm.

The preparation of the present Brit. Pharm. is 5 times the strength of the Brit. Pharm. of 1885.

Spirit of Curacao.

Oil of Curaçao orange.....	fl.oz.	2½
Oil of fennel.....	m.	25
Oil of bitter almond.....	m.	6
Deodorized alcohol, to make.....	fl.oz.	16

Mix the oils with the alcohol, and keep the spirit in completely-filled and well-corked bottles, and stored in a cool and dark place.

The essential oils used in this case must be as fresh as possible, and abso-

lutely free from any terebinthinate odor or taste. Oil of Curaçao orange may be obtained without difficulty in the market, but it should be carefully examined as to its quality, immediately upon receipt, and should not be kept in stock, for any length of time, without special precautions. A still finer quality of oil of orange is that derived from *Citrus nobilis*, which is known in the market as oil of mandarin.—N. F.

Spirit of Ether. (Spiritus Ætheris—Hoffmann's Drops—Liquor Anodyne Mineralis Hoffmanni.)

Stronger etherfl.oz. $5\frac{1}{4}$
Alcoholfl.oz. $10\frac{3}{4}$
—U. S. P.

The ordinary (not "stronger") ether may be used if desired, if it be mixed in the proportion of $6\frac{3}{4}$ fluidounces with $9\frac{1}{4}$ fluidounces of alcohol.

The above is the preparation commonly sold as Hoffmann's Drops and recognized by German works under this name.

The Brit. Pharm. directs mixing 1 volume of stronger ether with 2 volumes of alcohol. The Germ. and Austr. Pharms. direct 1 part by weight of stronger ether to 3 parts of alcohol, which is equivalent to $4\frac{1}{2}$ fluidounces of the former to $11\frac{3}{4}$ of the latter.

Spirit of Ether, Camphorated. (Kamfer Draaber—Camphor Drops—Nerve Drops—Nerf Drofpar.)

Norw. and Dan. Pharms.:

Camphorav.oz. 3
Stronger etherfl.oz. 5
Alcoholfl.oz. 15

Spirit of Ether, Compound. (Hoffmann's Anodyne.)

I.

Stronger etherfl.oz. 5
Alcoholfl.oz. 10
Ethereal oilfl.dr. 3
—U. S. P.

Or mix ordinary (so-called U. S. P. 1880) ether, $6\frac{1}{2}$ fluidounces, $8\frac{1}{2}$ fluidounces of alcohol and 3 fluidrams of ethereal oil.

The Hoffmann's anodyne of the market is an uncertain preparation obtained in the redistillation of crude sulfuric ether and subsequently more or less

altered by the addition of alcohol, ether, etc.

II.

Stronger etherfl.oz. $2\frac{1}{2}$
Alcoholfl.oz. 39
Sulfuric acidfl.oz. 17
Distilled waterfl.dr. 6
Sodium bicarbonatesufficient

Gradually mix the acid with 20 fluidounces of alcohol, let stand 24 hours, then distil slowly until a thermometer, the bulb of which is within the liquid, indicates a temperature of 171° deg. C. Pour the distillate into a separator, and after separation is complete, remove the lower layer. Add the distilled water to the upper layer and also gradually sodium bicarbonate until, after agitation, the liquid is nearly neutral to litmus paper. Separate the ethereal liquid and add to it the ether and 19 fluidounces of alcohol.—Brit. Pharm.

Spirit of Formic Acid. (Spiritus Formicarum—Spirit of Ants—Ameisen Spiritus or Geist.)

Formic acidfl.dr. 4
Distilled waterfl.oz. $3\frac{1}{2}$
Alcohol, to make.....fl.oz. 16

Mix the formic acid with the distilled water, and add the alcohol.—N. F.

Formic acid for this preparation should have a specific gravity of 1.060 to 1.063, or containing 25 per cent. of absolute formic acid.

The formula of the Germ. Pharm. is practically identical with the above.

Spirit of Horse-Radish, Compound. (Spiritus Armoracæ Compositus.)

Horseradish root, fresh,
scrapedav.oz. 2
Bitter orange peel, cut small
and well bruised.....av.oz. 2
Nutmeg, bruisedgr. 22
Alcoholfl.oz. 10
Distilled waterfl.oz. 12

Mix and distil 16 fluidounces.—Brit. Pharm.

Spirit of Juniper.

Oil of juniper berries.....fl.oz. 1
Alcoholfl.oz. 19
—U. S. P. and Brit. Pharm.

The preparation of the Brit. Pharm. is $2\frac{1}{2}$ times the strength of the Brit. Pharm. of 1885.

The Germ. Pharm. directs mixing 4 av.ounces of crushed juniper berries, 14 fluidounces of alcohol and 11½ of water, macerating for 24 hours at a temperature of 15 to 20 deg. C., occasionally agitating, and distilling off 17 av.ounces.

Spirit of Juniper, Compound.

Oil of juniper berries.....	fl.dr.	1
Oil of caraway.....	m.	8
	(about drops 12)	
Oil of fennel	m.	8
	(about drops 12)	
Alcohol	fl.oz.	22½
Water, to make.....	fl.oz.	32

Dissolve the oils in the alcohol, and gradually add the water.—U. S. P.

This is used as a substitute for Holland gin.

Spirit of Lavender.

Oil of lavender flowers.....	fl.oz.	1
Deodorized alcohol	fl.oz.	19

The preparation of the Brit. Pharm. is 2 times the strength of the above and is 5 times the strength of that of the Brit. Pharm. of 1885.—U. S. P.

The Germ. Pharm. directs mixing 4 av.ounces of lavender flowers, 14 fluidounces of alcohol and 11½ of water, macerating for 24 hours at a temperature of 15 to 20 deg. C., occasionally agitating, and distilling off 17 fluidounces.

Spirit of Lemon. (Essence of Lemon—Spiritus Citri or Limonis.)

Oil of lemon.....	fl.oz.	1
Lemon peel	av.oz.	1
Deodorized alcohol, to make.....	fl.oz.	20

Dissolve the oil in 18 fluidounces of the alcohol, add the lemon peel, macerate for 24 hours, agitating occasionally, filter, and through the filter add enough deodorized alcohol to make the filtrate measure 20 fluidounces.—N. F. Appendix and U. S. P. 1890.

The oil of lemon should be pure and perfectly free from terebinthinate odor, and the lemon peel should have been freshly grated from the fruit.

Spirit of Mastic, Compound. (Spiritus Matricalis—Mutter Spiritus.)

Mastic	av.oz.	¾
Olibanum	av.oz.	¾
Myrrh	av.oz.	¾

Alcohol	fl.oz.	16
Water	fl.oz.	4½

Macerate the contused drugs with the mixed alcohol and water for 24 hours, and distil 16 fluidounces.—H. modified.

Spirit of Melissa. (Spirit of Balm—Melissen Geist.)

This may be prepared by distilling 4 av.ounces of melissa herb with 14 fluidounces of alcohol and 20 of water, so as to obtain 16 fluidounces of product.—D. modified.

It may also be prepared by dissolving 24 drops of oil of melissa in 12 fluidounces of alcohol and adding 4 fluidounces of water.

Spirit of Melissa, Compound. (White Mother Drops—Carmelite Spirit—Karmeliter Geist—Eau de Melisse de Carmes.)

I.	Melissa herb	gr.	465
	Lemon peel	gr.	400
	Nutmeg	gr.	200
	Cassia cinnamon	gr.	100
	Clove	gr.	100
	Alcohol	fl.oz.	13
	Water	fl.oz.	18

Mix all and distil off 16 fluidounces.—

Germ. Pharm.

II.

A quicker and more convenient process is this:

Oil of melissa, true.....	m.	20
Oil of lemon.....	gr.	20
Oil of nutmeg.....	m.	15
Oil of clove.....	m.	15
Oil of cassia.....	m.	15
Water	fl.oz.	1
Alcohol, to make.....	fl.oz.	16

—H.

Spirit of Mustard. (Spiritus Sinapis.)

Volatile oil of mustard.....	fl.dr.	2½
Alcohol, to make.....	fl.oz.	16

Or mix in the proportion of 1 part by weight of oil to 49 of alcohol.—N. F. and Germ. Pharm.

Spirit of Nitroglycerin. (Spirit of Glonoin or Trinitrin—Solution of Trinitrin or Nitroglycerin, Brit. Pharm.)

Owing to the highly dangerous character of nitroglycerin, this preparation is never made by the pharmacist, but always purchased by him in the form of

a more or less dilute alcoholic solution.

The spirit of nitroglycerin is described by the U. S. P. as "an alcoholic solution of glonoin or nitroglycerin (glyceryl or propenyl trinitrate) containing 1 per cent., by weight, of the substance."

The spirit should be kept and transported in well-stoppered tin cans, and should be stored in a cool place, remote from lights or fire.

The preparation of the Brit. Pharm. is of the same strength as that of the U. S. P. See also the homeopathic Tincture of Glonoin.

Great care should be exercised in dispensing, handling, packing, transporting and storing the spirit, as a dangerous explosion may result if any considerable quantity be spilled and the alcohol be partially or wholly lost by evaporation.

In case of spilling of the spirit, pour over it at once some solution of potassa, which quickly causes decomposition of the nitroglycerin. An expert on explosives advises pouring on the spilled spirit some solution of sodium sulfocarbonate prepared by boiling sulfur with aqueous solution of sodium carbonate.

Spirit of Nitrous Ether. (Sweet Spirit of Nitre—Spiritus Nitri Dulcis.)

I.	
Sodium nitrite	av.oz. 2½
Sulfuric acid	av.oz. 1
Sodium carbonate, monohydrated	gr. 7
Potassium carbonate, completely deprived of water by drying	gr. 35
Alcohol, water, each.....	sufficient

Mix the acid with 3 fluidounces of water, cool the liquid, add 2 fluidounces and 1 fluidram of alcohol previously diluted with the same amount of water and introduce the mixture into a flask, holding not less than 25 fluidounces, surrounded by a mixture of ice and water. Dissolve the sodium nitrite in 7 fluidounces of water, filter, and, having poured the filtrate into a separating funnel, allow the liquid to drop slowly into the flask containing the acid mixture.

When all has been added and the reaction is complete, allow any crystals which may have formed to settle at the bottom of the flask and decant the cold mixture of ethyl nitrite and aqueous solution quickly to the previously cleaned separatory funnel and draw off and discard the aqueous liquid. Wash the separated ethyl nitrite first with 4 fluidrams of ice-cold water, and then remove any traces of acid by washing it with 3 fluidrams of ice-cold water containing the sodium carbonate in solution. Carefully separate the ethyl nitrite from the aqueous liquid and agitate it in a well-stoppered vial with the potassium carbonate to remove traces of water. Then cool the liquid, decant it, and pour the ethyl nitrite immediately into a tared bottle 12½ av.ounces of alcohol. Ascertain the weight of the ethyl nitrite poured into the alcohol by noting the increase in the weight of the tared bottle and contents and then add enough alcohol to make the mixture weigh 22 times the weight of the ethyl nitrite added. Lastly, transfer the product to small, well-stoppered amber-colored vials, and keep these in a cool place, remote from lights or fire.—U. S. P.

While the U. S. P. does not distinctly specify it, distilled water only should be used in making this preparation.

This process is an entirely new one, as in all previous editions of the U. S. P. and in all other pharmacopeias, this preparation is made by distillation.

Spirit of nitrous ether should contain not less than 4 per cent. by weight of ethyl nitrite.

Commercial sweet spirit of nitre, especially such as is obtained in large quantities as in carboys, is of very inferior quality. It contains water which hastens decomposition and it is always more or less exposed to light and air, which are both prejudicial. A better article can be made from the commercial ethyl nitrite, or so-called "concentrated nitrous ether," which is usually stated to contain 90 per cent. of absolute ethyl

nitrite. This is to be mixed with 19 times its weight or 21 times its volume of alcohol, to make sweet spirit of nitre. The ethyl nitrite must, however, be quite fresh, as it soon decomposes.

II.

Nitric acid	fl.oz. $1\frac{1}{2}$
Sulfuric acid	fl.oz. 1
Copper, fine wire.....	av.oz. 1
Alcohol	sufficient

To 10 fluidounces of the alcohol, add gradually the sulfuric acid, stirring them together; then stir in $1\frac{1}{4}$ fluidounces of the nitric acid, the mixture being made in a retort or flask in which the copper has been placed, to which is fitted a thermometer, and to which is attached an efficient condenser and receiver, the latter containing 10 fluidounces of alcohol; apply heat gently; distil at a temperature commencing at 76 deg. C. and rising to 80 deg. C., but not exceeding 82 deg. C., until the volume of the liquid in the receiver has been increased to 16 fluidounces, the receiver and condenser being kept cool with ice-cold water. Then withdraw the source of heat, and having allowed the contents of the retort to cool, introduce the remaining 2 fluidrams of nitric acid, and resume distillation as before, until the liquid in the receiver has increased to 17 fluidounces. Mix this liquid with 10 fluidounces of alcohol, or as much as will make the product contain $2\frac{1}{2}$ p. c. of ethyl nitrite.—Brit. Pharm.

The U. S. P. process is superior to that of the Brit. Pharm.

It will be observed that the U. S. P. preparation is to contain 4 p. c. of ethyl nitrite, while that of the Brit. is to contain but $2\frac{1}{2}$ p. c.

The Brit. Pharm. also recognizes a Solution of Ethyl Nitrite which is a mixture of 1 volume of glycerin with 19 of absolute alcohol, containing when freshly made 3 p. c. by weight of ethyl nitrite, and even when long kept not less than $2\frac{1}{2}$ p. c. by weight of ethyl nitrite. The latter is to be obtained by the inter-

action of alcohol, sodium nitrite and diluted sulfuric acid, at a low temperature; but no process is given.

III.

Alcohol	av.oz. 20
Nitric acid, pure.....	av.oz. 6
Calcined magnesia	sufficient

Weigh the nitric acid into a wide, capacious glass flask; weigh half the alcohol into another vessel; then pour the latter liquid slowly and carefully in a thin stream into the flask so that the alcohol will be superimposed on the acid, during the process disturbing the acid as little as possible. Without agitating, set aside for 2 days, then mix, and distil carefully, on a water bath, into a receiver containing the remainder of the alcohol. The condenser and receiver must be thoroughly cooled. Continue distillation until no more vapors arise, in the meantime, however, at any time discontinuing the process should yellow vapors arise. Neutralize the liquid with the magnesia, let stand for 24 hours, and redistil it, beginning with a very low temperature. Discontinue distillation when the distillate weighs 16 av.ounces.—Germ. Pharm.

Spirit of Nutmeg. (Essence of Nutmeg—*Spiritus Myristicæ*.)

Oil of nutmeg.....	fl.oz. 1
Alcohol	fl.oz. 19

—N. F. Appendix and U. S. P. 1890.

The preparation of the Brit. Pharm. is 2 times as strong as the above and 5 times as strong as the preparation of the Brit. Pharm. of 1885.

Spirit, Ophthalmic. (Alcoholic Eye-Wash.)

Oil of lavender flowers.....	m. 10
Oil of rosemary.....	m. 30
Alcohol, to make.....	fl.oz. 1

Mix them by agitation, and, if necessary, filter the liquid through paper.—N. F.

Spirit of Orange.

Oil of orange peel.....	fl.oz. 1
Deodorized alcohol	fl.oz. 19

—N. F. Appendix and U. S. P. 1890.

The oil must be perfectly free from terebenthinate odor.

Spirit of Orange, Compound.

Oil of orange peel.....	f℥.dr. 6
Oil of lemon.....	f℥.dr. 1½
Oil of coriander.....	m. 40
Oil of anise.....	m. 10
Deodorized alcohol, to make.....	f℥.oz. 4

Keep the product in completely filled, well-stoppered bottles in a cool and dark place.—U. S. P. and N. F. (1st edition).

The oil of orange peel used should be that of the bitter orange.

This preparation is used in making aromatic elixir.

Spirit of Peppermint. (Essence of Peppermint.)

I.

Oil of peppermint.....	f℥.oz. 1½
Peppermint herb, bruised or coarsely ground	gr. 70
Alcohol, to make.....	f℥.oz. 15

Dissolve the oil in 13½ fluidounces of alcohol, add the herb, macerate for 24 hours, agitating occasionally, filter, and add enough alcohol, through the filter, to make the filtrate measure 15 fluidounces.—U. S. P.

II. The preparation of the Brit. Pharm. is of the same strength as the above, but is made without the herb, in other words, it is uncolored. This preparation is 5 times the strength of the spirit of peppermint of the Brit. Pharm. of 1885 and half as strong as the essence of peppermint of the same work.

III. The preparation of the Germ. Pharm. is made from 1 part by weight of oil and 9 parts of alcohol.

IV. A cheap preparation, such as would be suitable for saloon use, may be made as follows:

Oil of peppermint.....	f℥.oz. 1
Alcohol	f℥.oz. 24
Water	f℥.oz. 7

Mix the oil with the alcohol, add the water, color with tincture of curcuma and filter through calcium phosphate or talcum.

Spirit of Phosphorus. (Tincture of Phosphorus.)

Phosphorus	gr. 10½
Absolute alcohol	f℥.oz. 16

Weigh the phosphorus in a tared capsule

containing water, then dry it carefully and quickly with blotting paper, and introduce it into a flask containing the absolute alcohol. Into the neck of the flask insert a perforated cork stopper bearing a long glass tube about 2 feet long, to serve as an air condenser. Place the flask into a water bath, and heat so that the alcohol may be kept gently boiling, until the phosphorus is dissolved. Then allow the liquid to cool, and, if necessary, add to it enough absolute alcohol to restore the measure to 16 fluidounces.—N. F. Appendix and U. S. P. 1890.

The phosphorus used should be perfectly translucent and should be cut under water.

Keep the product in small, dark amber-colored, well-stoppered vials, in a cool and dark place.

Each fluidram contains about 1/15 gr. of phosphorus.

The preparation is intended for making elixir of phosphorous. It is unsuited for internal administration without corrigents. Care should be taken not to confound it with solution of phosphorus.

See also Tincture of Phosphorus for the similar homeopathic preparation.

Spirit, Rainworm. (Regenwurm Spiritus or Geist—Spiritus Lumbricorum.)

Ammonium carbonate	gr. 25
Dippel's animal oil.....	drop 1
Water	f℥.oz. 4
Alcohol	f℥.oz. 12

—H.

Spirit of formic acid is also dispensed.

Spirit of Rosemary.

Oil of rosemary.....	f℥.dr. 1½
Alcohol, to make.....	f℥.oz. 15

—Brit. Pharm.

This preparation is 5 times the strength of that of the Brit. Pharm. of 1885.

Spirit of Sassafras. (Tincture of Oil of Sassafras—Essence of Sassafras.)

Oil of sassafras.....	f℥.oz. 1
Alcohol	f℥.oz. 11

—Eclectic.

Spirit of Scurvy-Grass. (Spiritus Cochleariæ—Loeffelkraut Spiritus.)

Scurvy-grass, dried	av.oz. 3
White mustard, bruised.....	av.oz. ¾
Alcohol	fl.oz. 29
Water	av.oz. 13

Mix the scurvy-grass, mustard and water, macerate for 3 hours, add the alcohol, and distil off 16 fluidounces.—Germ. Pharm.

This spirit may be more conveniently prepared from 60 drops of oil of scurvy-grass, 12 fluidounces of alcohol and 4 of water.

The preparation of the former Germ. Pharm. was made by distilling fresh scurvy-grass with water and alcohol.

Spirit of Soap. (Spiritus Saponis or Saponatus—Spiritus Saponis Kalini—Seifen Geist or Spiritus.)

I.

Castile soap, in shavings...	av.oz. 3
Alcohol	fl.oz. 9½
Water, to make.....	fl.oz. 16

Introduce the soap into a bottle, add the alcohol and 3½ fluidounces of water, cork the bottle, and immerse in hot water, frequently shaking. When the soap is dissolved, allow the bottle and contents to become cold, add the remainder of the water and filter.—N. F.

II.

Castile soap	av.oz. 1¾
Alcohol	fl.oz. 12
Water	fl.oz. 3½
Oil of lavender flowers.....	m. 15

—Austr. Pharm.

III.

Olive oil	av.oz. 3
Caustic potassa (90 p. c.)....	gr. 260
Alcohol	fl.oz. 17
Water	sufficient

Dissolve the potassa in 3 fluidounces of water, mix this with the oil and 4½ fluidounces of alcohol in a water bath, and heat to boiling until saponification ensues and a sample of the product makes a clear mixture with water and alcohol. Then add the remainder of the alcohol and the water, allow to cool, and filter.

Each of the above should preferably be allowed to stand in a cool place for

at least 24 hours before filtering.—Germ. Pharm.

The above are similar to Liniment of Soft Soap, or so-called tincture of green soap, which see.

Spirit of Soap, Camphorated. (Liquid Opodeldoc.)

Spirit of camphor.....	fl.oz. 4
Spirit of soap.....	fl.oz. 11½
Ammonia water	fl.dr. 6
Oil of thyme, white.....	fl.dr. ½
Oil of rosemary.....	fl.dr. 1

Mix and filter.—Germ. Pharm.

This may become turbid, so it is best to set it aside in a cool place for several days before filtering.

This is similar to Liniment of Soap, which see.

Spirit of Spearmint. (Essence of Spearmint.)

The U. S. P. spirit is prepared like spirit of peppermint, which see.

Spirit of Wintergreen. (Spirit of Gaultheria.)

Oil of wintergreen.....	fl.oz. 1
Alcohol	fl.oz. 19

—U. S. P.

Sponge, Burnt, Artificial.

The following mixture may be dispensed when burnt sponge is demanded:

Potassium bromid	gr. 132
Sodium chlorid	av.oz. ½
Potassium iodid	av.oz. 1
Ferric oxid	av.oz. 1½
Sodium bicarbonate	av.oz. 3
Prepared oyster shell.....	av.oz. 4
Wood charcoal	av.oz. 9½

Mix and reduce to fine powder.

Prepared oyster shell is made by thoroughly cleaning the shell, then reducing in a mortar, separating the finer particles by elutriation and drying the latter.—H. modified.

Sponges, Antiseptic.

Sponges for antiseptic purposes should be thoroughly cleansed, bleached, and thoroughly cleansed again by washing freely in water. Then place in a carbolic solution, or if not desirable to use the latter on account of its odor, which is always suggestive of operations or hospitals, a solution of thymol or other antiseptic may be used instead.

Sponge, Carbolized.

Carbolic acid, crystal.....gr. 375
 Alcoholfl.oz. 4
 Water, distilledfl.oz. 12½

Bleached sponges are allowed to remain in this solution for 24 hours, when an equal volume of water is added. The sponges are to remain in the fluid.—D.

Sponge Tent. (Compressed Sponge.)

Sponge,
 Mucilage of acacia,
 Water, eachsufficient

Mix a sufficient quantity of mucilage of acacia and of water, in the proportion of 1 volume of the former to 9 volumes of the latter, and immerse in this liquid, the sponge previously freed from sand and other obvious impurities, and cut into suitable pieces. When the sponge has been thoroughly impregnated, firmly wrap twine around it so as to bring it to the desired shape, and then dry it.

The sponge thus prepared is best preserved with the twine wrapped around it. If the twine is removed, special care must be taken to protect the sponge against damp air.—N. F.

Starch, Iodized. (Iodid of Starch.)

Starchgr. 475
 Iodingr. 25
 Distilled watersufficient

Triturate the iodine with a small quantity of distilled water, add the starch gradually, and continue triturating until the compound assumes a uniform blue color, approaching to black. Dry it at a temperature not exceeding 40 deg. C., and rub it to a fine powder.

Preserve in glass-stoppered vials.—N. F. Appendix and U. S. P. 1880.

Another method of incorporating the iodine is to dissolve it in ether or chloroform before adding it to the starch.

A so-called "soluble iodid of starch" may be prepared by using white dextrin in place of the starch.

Stearate of Morphine.

Caustic soda, pure.....gr. 50
 Stearic acid, pure.....gr. 355
 Morphine hydrochlorid.....gr. 470
 Distilled watersufficient

Heat the soda and acid with 10 fluid-ounces of distilled water until dissolved. To the sodium stearate solution obtained, add the morphine hydrochlorid previously dissolved in 14 fluid-ounces of water. Stir the mixture well, collect the precipitate, and wash it on a filter with distilled water until the washings are no longer rendered turbid by hydrochloric acid, or, after the addition of nitric acid, by silver nitrate. Then dry the precipitate, after which it may be crystallized from alcohol.

It contains 50 p. c. of morphine.

Stearate of Zinc.

Zinc acetategr. 289
 Solut'n of sodium stearate.fl.oz. 64
 Distilled waterfl.oz. 72

Dissolve the zinc acetate in 8 fluid-ounces of the water, warm the solution to about 70 deg. C., add the solution of sodium stearate gradually, with constant stirring or agitation, add the remainder of the water, stir thoroughly, allow to stand a few minutes, transfer to a muslin strainer, wash with water until free from acetate, and finally dry.

Instead of the zinc acetate, 379 grains of the sulfate may be used.—Edel's formula.

See also the similar preparation of the N. F., Oleo-Stearate of Zinc.

Steatins. (Unguenta Extensa.)

See Mulls, Plaster and Salve.

Storax, Liquid, Purified. (Prepared Storax.)

The Brit. Pharm. describes it as being prepared by dissolving in alcohol, filtering and subsequently evaporating the solvent.

The present Germ. Pharm. gives this process:

Heat storax on a water bath until most of the contained moisture is expelled, then dissolve in an equal weight of alcohol, filter, and evaporate the solvent.

The 2nd Germ. Pharm. and the present Austr. Pharm. direct dissolving the storax in half its weight of benzol, filtering, and evaporating the solvent.

Suet, Prepared. (Tallow—Sevum or Sebum—Talg.)

Mutton suet is official in the U. S. P. and Brit. and Germ. Pharms., but beef suet is also used. Either may be prepared by taking the fat from the vicinity of the kidneys of the sheep or cow, cutting into small pieces either by means of a knife or a chopper, heating cautiously until the fat is quite melted and then straining with expression through flannel. Dieterich recommends adding to the fatty matter in the dish 1/10 its weight of dried sodium sulfate in fine powder, continuing the heat for 15 minutes after thorough fusion has occurred, stirring frequently and filtering by hot filtration. The sodium sulfate removes moisture and assists in separating the membranes.

Beef suet has a slightly lower fusing point than mutton suet, otherwise the two are practically alike, so that one or the other may be selected, depending upon the use the product is to serve.

Suet, Deer.

Beef tallow is usually dispensed for this. It is generally sold either in the form of flat cake or of cylinders about 1 inch in diameter. It may be slightly hardened by the addition of about 5 per cent. of spermaceti or white wax.

Suet, Salicylated.

Salicylic acid	gr. 72
Benzoic acid	gr. 36
Mutton suet	av.oz. 8

Melt the suet on a water bath, add the acid, and dissolve by stirring.—Germ. Pharm.

Sulfur, Black. (Sulfur Vivum.)

Originally black sulfur is supposed to have been powdered crude sulfur or the residue from the purifications of the sulfur of commerce. Sometimes antimony sulfid was found to be present. Kebler, who analyzed a number of samples several years ago, found no uniformity in their composition, and from the analytical results and other information gathered at the time he suggested

the following formula for making the article factitiously:

Sulfur	parts 9
Lampblack, or powdered charcoal	part 1

If it is necessary to employ antimony sulfid, the following formula gives a fairly good product:

Sulfur	parts 22
Antimony sulfid	parts 3

Black sulfur is used to some extent in domestic veterinary practice as a remedy for scabies and other skin diseases.

Sulfur Iodid. (Iodid of Sulfur.)

Washed sulfur	part 1
Iodin	parts 4

Mix the two intimately by trituration, introduce the mixture into a glass flask, close the orifice loosely, and by means of a water bath, gradually, and with occasional agitation, apply a heat not exceeding 60 deg. C. until the ingredients combine and become of a uniformly dark color throughout. Then increase the heat to the boiling point of the water, so as to fuse the mass. Should any iodine have sublimed and condensed on the glass, incline the flask so as to combine the iodine with the fused mass, and then pour the latter out upon a porcelain plate or other suitable cold surface. After cooling, break the product into pieces of suitable size, and keep them in a glass-stoppered bottle, in a cool place.—U. S. P.

The formula of the Brit. Pharm. differs from the above only in directing sublimed sulfur instead of washed sulfur.

Sulfur, Precipitated. (Lac Sulfur—Milk of Sulfur.)

Sulfur, sublimed	av.oz. 16
Lime	av.oz. 8
Hydrochloric acid, water, each	sufficient

Slake the lime by the gradual addition of 3 pints of water and then mix it uniformly with 5 pints of water. Add the sulfur, previously sifted, and after thorough mixing add 10 pints of water and boil the mixture during 1 hour, agitating or stirring very frequently, and

replacing the water lost by evaporation. Then cover the vessel and permit the contents to cool and to become clear by subsidence. Carefully draw off the clear solution and filter the remainder. To the united liquids add gradually and with constant stirring, the hydrochloric acid, previously diluted with an equal volume of water, until the liquid is nearly neutralized, still retaining, however, an alkaline reaction and a yellow color. Collect the precipitate on a strainer, and wash it with water until the washings are tasteless and cease to give a precipitate with ammonium oxalate test solution. Then dry the product rapidly, at a moderate heat, and keep it in well-stoppered bottles.—U. S. P.

The hydrochloric acid must be of the full U. S. P. strength, viz., 31.9 p. c.; if weaker, proportionately more of it must be used.

The preparation of the market is usually sold under the name *lac sulfur* and contains calcium sulfate from using sulfuric acid as the precipitant instead of hydrochloric acid.

Sulfur, Washed. (Sulfur Lotum--Sulfur Depuratum.)

Sulfur, sublimedav.oz. 16
Ammonia water, 10 p. c....fl.dr. 13
Watersufficient

Sift the sulfur through a No. 30 sieve, mix it thoroughly with 16 fluidounces of water, add the ammonia water, and digest for 3 days, agitating occasionally. Then add another 16 fluidounces of water, shake well, throw the mixture on a muslin strainer, allow the liquid to drain, and wash the sulfur with water until the washings no longer impart a blue color to red litmus paper. Then allow to drain, press the residue strongly, dry it rapidly at a moderate heat, and pass it through a No. 30 sieve.—U. S. P.

Keep the product in well-stoppered bottles.

If the ordinary ammonia water be used, about 3 fluidounces will be necessary.

The directions of the Germ. and

Austr. Pharms. differ from the above only in using 11 fluidounces of water.

Suppositories. (Suppositoria.)

Suppositories are solid bodies of various weights and shapes, adapted for introduction into the various orifices of the human body, and melting readily at blood heat.

They are made with different vehicles, cocoa butter, sodium stearate, glycerinated gelatin, agar agar, gum, soap, etc., and are made of different forms, according to the purpose intended for. The ordinary suppositories are the rectal suppositories (these are understood whenever the term "suppositories" is used), pessaries or vaginal suppositories, bougies or urethral suppositories, nasal suppositories, and ear suppositories. The latter two kinds are but little employed, while of the other three the rectal suppositories are the ones in most common use.

The N. F. does not recognize any suppositories nor does the Germ. Pharm. The Brit. Pharm. recognizes several cocoa butter suppositories. The U. S. P. recognizes only glycerin suppositories besides giving general directions for making rectal, vaginal and urethral suppositories of cocoa butter and glycerinated gelatin. The N. F. recognizes suppositories of boroglycerin.

Cocoa Butter Suppositories.—The U. S. P. gives the following general process for these: Reduce the medicinal substance, if dry, to very fine powder, or, if an extract, soften it with an appropriate liquid, then mix it thoroughly in a mortar with about an equal weight of grated cocoa butter and incorporate the remainder of the cocoa butter until a homogeneous, plastic mass is obtained, adding, if necessary, a very small quantity of sweet almond oil (castor oil, wool fat or petrolatum are excellent) to assist in making a suitable mass. Roll the mass out on a graduated tile (like a pill tile) into a cylinder, cut this into the required number of equal parts, and

with a spatula or other suitable mechanical aid (or with the fingers), form them into the proper shape.

Cocoa butter may be grated by means of an ordinary household grater.

In rolling the suppository mass it is customary to use lycopodium as a dusting powder to prevent the mass from sticking to the tile and fingers.

Suppositories made in the above manner are the so-called hand-made suppositories and these are preferred by many operators because troublesome heating of the mass and its subsequent cooling and chilling of molds is avoided, also because the medicament is more evenly distributed in the mass.

If the process of fusion is preferred for making suppositories, the U. S. P. directs the medicinal substance to be reduced to a fine powder, or, if an extract, softened with a suitable liquid, then triturated in a mortar with about an equal weight of grated cocoa butter, and having previously melted the remainder of the cocoa butter at a gentle heat in a suitable dish provided with a good lip (such as a porcelain capsule or a casserole), add the mixture to the contents of the dish. Allow the whole to cool to about 38 deg. C., and when the mixture begins to show signs of congelation, pour it at once into well-cooled molds of the desired kind. The molds are to be cooled by placing them in a mixture of ice and water for some time before pouring in the suppository mixture into them. Keep the molds at a freezing temperature until the suppositories have hardened and are ready to be removed.

The objection to the fusion process in making cocoa butter is that the medicament is not so readily incorporated and will subside to the bottom of the mold (apex of the suppository). This is avoided to a great extent by not pouring the mixture into the molds until it is almost at the point of congelation and keeping it well stirred while pouring into the molds. If the mixture should

solidify before pouring from the dish the latter may be very slightly rewarmed. When made in this manner the suppositories are also more readily removed from the molds.

Before pouring the suppository mixture into the molds, the latter should be dusted with lycopodium or be rinsed with soap liniment, liniment of soft soap or spirit of soap to prevent adhesion of the suppository to the metal and facilitate its removal.

For suppositories containing chloral, phenol, their derivatives, or substances which soften the vehicle, raise the melting point of the cocoa butter by the addition of 10 to 15 per cent. of spermaceti, but the melting point must not be raised above 37 deg. C.

Unless otherwise specified the U. S. P. directs that rectal suppositories made of cocoa butter should be cone-shaped or spindle-shaped and of the weight of about 30 grains; urethral suppositories (bougies) should be pencil-shaped, pointed at one end, either 3 inches long, and weigh about 15 grains, or 6 inches long and weigh about 30 grains; and vaginal suppositories (pessaries) should be globular or oviform and weigh about 60 grains. The Germ. Pharm. directs that rectal suppositories shall weigh 30 to 45 grains and vaginal suppositories twice as much.

Providing the medicating substance is not in powder form, and cannot conveniently or advantageously be reduced to this form, the method of mixing is not so simple as outlined above. If something like an extract is to be incorporated, this must first be softened with water, glycerin, diluted alcohol, or alcohol, according to its character, after which it may be mixed with the cocoa butter as before; or it may be that some fixed oil or other substance will be a more suitable softening agent. Possibly the substance is soluble in the cocoa butter in a melted condition; it should, of course, be so dissolved, and after cooling and hardening, the mass should be

reduced to powder by grating or otherwise, mixed possibly with a little petrolatum or fixed oil, and be fashioned into suppositories as before. Large quantities of liquids cannot, of course, be incorporated with cocoa butter masses; in many instances, however, it will be possible to concentrate the liquid by evaporation without injury to its medicinal principles; then, subsequently, the concentrated residue may be mixed with the cocoa butter as before.

Cocoa butter suppositories have the advantage of melting at a low temperature and of being readily absorbed, but the disadvantage, when in pencil form, is that they are too brittle. Hence cocoa butter suppositories are generally preferred for rectal and vaginal use, but not for use in the urethra, glycerinated gelatin suppositories being preferred for the latter.

Cocoa butter suppositories should always be preserved in a cool place.

Elastic cocoa butter urethral suppositories may be made as follows (in D.):

Cocoa butter	av.oz. 4
Acacia, fine powder.....	av.oz. 2
Glycerin	av.oz. 1
Distilled water	fl.oz. 1

Melt the cocoa butter at a gentle heat, stir in the acacia, keep at a temperature of 30 to 35 deg. C. for one-half hour, then stir until cool, meanwhile gradually incorporating a mixture of the glycerin and water.

This mixture is to be preserved in well-closed vessels. When bougies are to be prepared, the medicament is to be mixed with a requisite quantity of the mass, and then rolled out on the pill board or tile.

Glycerinated Gelatin Suppositories (usually called gelatin suppositories).—The U. S. P. gives the following general process for making suppositories of glycerinated gelatin (also called glyco-gelatin): Mix the medicinal substance, if solid and soluble, in water or glycerin, or if a miscible liquid, with a little water, and add enough glycerin to make

the weight of the mixture one-half that of the finished mass. Then thoroughly incorporate it with an equal weight of melted glycerinated gelatin and pour it at once into suitable molds which have been greased with a small quantity of petrolatum. Cool the molds thoroughly before removing the suppositories. Molds for urethral suppositories should be warmed sufficiently before pouring in the mass to facilitate proper filling of the mold. Suppositories having a firmer consistence may be prepared by substituting mucilage of acacia for a portion of the water or glycerin. If the medicinal be insoluble in water or glycerin, thoroughly rub it up in a warm mortar with enough glycerin to make the weight of the mixture one-half that of the finished mass. Then thoroughly incorporate it with an equal weight of melted glycerinated gelatin and pour it into suitable molds as directed above. With bulky powders about one-half the glycerin may be replaced with water before levigation (or rubbing in the mortar). Glycerinated gelatin suppositories should be protected against the effects of heat and moisture and dry air by keeping them in tightly closed containers in a cool place.

Unless otherwise specified, the U. S. P. directs that urethral suppositories (bougies) of glycerinated gelatin should be pencil-shaped, pointed at one extremity and either 3 inches long and weigh about 30 grains or 6 inches long and weigh about 60 grains; and vaginal suppositories (pessaries) should be globular or oviform in shape and weigh about 150 grains.

Glycerinated gelatin for suppositories is directed by the U. S. P. to be made as follows:

Glycerinated Gelatin.

Gelatin	av.oz. 8
Glycerin	av.oz. 8
Water	sufficient

Pour upon the gelatin enough water, which has previously been boiled and cooled, to cover it, allow to stand one hour, pour off the water, and allow the

gelatin to drain for a few minutes, then transfer it to a tared dish, add the glycerin, and heat on a water bath until the gelatin is dissolved. Strain the solution while hot and continue the heat on the water bath until the product weighs 16 av.ounces. When cold, cut the mass into pieces, and preserve these in suitable containers.

By suitable containers would be understood well-closed vessels which would prevent undue access of air.

Besides the above from the U. S. P. the following from Dieterich's Manual are also used:

Hard Glycerin-Gelatin Mass.

Gelatin	av.oz. 2½
Water	fl.oz. 2½
Glycerin	av.oz. 5

This mass is to be prepared as directed, and is then to be evaporated until it weighs 10 av.ounces.

Soft Glycerin-Gelatin Mass.

Gelatin	av.oz. 1½
Water	fl.oz. 4½
Glycerin	av.oz. 5

Evaporate this also until it weighs 10 av.ounces.

The molds used for bougies are of the hinged kind, so that they may be opened and the bougies taken out; they are constructed of brass, block tin or nickel-plated iron. Before using, the interior of the molds must be rubbed with petrolatum or oil to prevent adhesion of the bougies; they must also be made quite warm to permit escape of air bubbles. After pouring the mixture into molds, the latter should be placed on ice to cause immediate and rapid hardening of the suppositories. After cooling, the mold should be opened and the bougies taken out and exposed to the air for several hours, that they may harden on the surface after which they should be wrapped in waxed paper and laid horizontally in boxes. Or they may be kept in a box, rolled in lycopodium. The boxes should then be well closed.

In the absence of a mold, gelatin bougies may be formed by means of a glass tube of suitable size. Oil this tube

by sucking into it a small quantity of olive oil or liquid petrolatum and allowing this to run out again. Now place the tube into the gelatin mass, suck up the latter to the desired height, cover the upper end quickly with the finger, and place the lower end on ice until the lower portion of the mass has solidified; now remove the finger and lay the tube down on the ice in an inclined position. When the bougie has hardened it may be removed by pushing it out with a smaller glass tube or a rod of some kind.

Urethral suppositories or bougies are usually made with gelatin, these being without the brittleness of cocoa butter bougies.

Agar Agar Suppositories.—These may be prepared by heating 1 part of powdered agar agar with 29 parts of water until dissolved, adding the medicament if soluble or miscible with the vehicle and pouring into conical molds of paper. The latter may be formed from waxed paper with the apex turned over.

In some cases the agar is triturated with the medicament, as in the cases of tannin, kneaded with water, and rolled out by hand.

Before using agar agar, its slight acidity should be neutralized by adding 5 grains of sodium bicarbonate to 1 av.-ounce of powder.

Gum Suppositories.—These may be prepared from mixtures of powdered tragacanth, starch, dextrin, sugar and medicament, rubbed to a paste with water and glycerin, or they may be prepared by massing the medicating ingredient with mucilage of acacia, glycerin and water, rolling into the proper form, and then drying. If the suppositories contain too large a proportion of medicating ingredient, the latter may be diluted with some inert or harmless body; powdered boric acid will serve acceptably.

This kind of a mixture is suitable only for urethral suppositories.

Soap Suppositories.—These may be

prepared by incorporating the medication with powdered curd or tallow soap, adding enough glycerite of starch to make a suitable mass, dividing into the requisite number of parts, and rolling these into the suppository form.

Sodium Stearate Suppositories.—The U. S. P. recognizes one suppository made with this vehicle, viz., glycerin suppositories, and in this instance the vehicle is derived by chemical combination from stearic acid and sodium carbonate used in the making of the suppository.

Suppositories (Urethral), Alum.

Alum, powderav.oz. $\frac{1}{2}$
Glycerite of starch.....av.oz. $2\frac{1}{2}$
Soft glycerin-gelatin mass..av.oz. 7

Triturate the alum with the glycerite to a smooth paste, add to the melted gelatin mass, heat the whole for a few moments over a naked flame, pour into the hot molds, allow to stand for a few minutes, and then cool rapidly by placing upon ice.

The product contains 5 per cent. of alum.—D.

These bougies may be made with cocoa butter by triturating the alum with the grated butter, adding oil or petrolatum to make a suitable mass, rolling out on a pill board or tile, and cutting into suitable lengths.

Suppositories of Asafetida.

Ethereal fluid extract of
asafetidagr. 360
Cocoa buttergr. 390

Heat the extract gently in a capsule on a water bath to expel the ether, add the cocoa butter, melt together, stir for a few minutes, and pour into molds to form 12 rectal suppositories. The orange-colored resin may be rejected as the cocoa butter has dissolved its valuable odorous principle.

The resinous deposit may be avoided probably by first melting the cocoa butter, then adding the fluid extract, and heating until the ether is driven off.—Eclectic.

Suppositories of Atropine.

Atropine, alkaloid or sulfategr. $\frac{1}{5}$
Cocoa buttergr. 390

Make into 12 rectal suppositories.—Eclectic.

Suppositories, Belladonna.

Extract of belladonna, Brit.
Pharm.gr. 18
Cocoa buttersufficient

The cocoa butter should be enough to form with the extract a mixture which will fill 12 suitable molds of the capacity of 15 to 16 grains (or about 1 gram) of the butter.

Melt the butter, triturate the extract intimately with a small amount of the butter, add to remainder of the butter, stir well, and as the mixture begins to thicken, pour it into the molds; or let the mixture cool and divide it into 12 equal parts of a conical or other convenient form for a suppository.—Brit. Pharm.

Each suppository contains approximately $\frac{1}{60}$ gr. of the alkaloids of belladonna root.

The method usually approved here for making suppositories containing belladonna or other extract is to make a smooth paste of the extract with water, diluted alcohol, or alcohol (generally diluted alcohol), triturating this intimately with a small portion of the cocoa butter, adding to the remainder of the butter in a melted condition, stirring until it begins to thicken, and quickly pouring into well-chilled molds, keeping well stirred meanwhile. Or triturate the paste with all the butter in a grated condition, make a mass by adding a little petrolatum or castor oil, divide into the requisite number of parts, and form the suppositories by hand or with a spatula.

Suppositories of Boroglycerin.

Glycerinated gelatingr. 230
Boric acidgr. 60
Glyceringr. 270
Watergr. 210

Triturate the boric acid with the glycerin and water and add the mixture to the glycerinated gelatin, melted on a

water bath. Continue the heat until the boric acid is dissolved, replacing the water if any be lost by exaporation, and pour the mixture into suitable molds, to make 12 rectal suppositories.—N. F.

Suppositories, Carbolic Acid. (Phenol Suppositories.)

Carbolic acid, crystal.....gr. 12

White waxgr. 24

Cocoa buttersufficient

The cocoa butter should be enough to form, with the acid and wax, a mixture which will fill 12 suitable molds, each of the capacity of 15 to 16 grains (or about one gram) of cocoa butter.

Dissolve the acid in butter and wax, previously melted together at a low temperature, and pour the mixture into the molds; or let the mixture cool and then divide into 12 equal parts of a conical or other convenient form for a suppository.

Each suppository contains 1 grain of carbolic acid.—Brit. Pharm.

Crystal carbolic acid only should be used in making these suppositories as the liquefied form, owing to the presence of foreign liquid, is insoluble in the fatty substances.

The wax is added to counteract the softening action of the acid upon the cocoa butter.

In the Brit. Pharm. 1885, carbolic acid suppositories (then called carbolic acid suppositories with soap) were directed to be prepared from 12 grains of acid, 180 grains of powdered curd soap, and 40 grains, or a sufficiency, of glycerite of starch. Mix the ingredients so as to form a paste of suitable consistence, divide the mass into 12 equal parts, each of which is to be made into a conical or other convenient form for a suppository.

Suppositories (Urethral), Chloral Hydrate.

Chloral hydrategr. 23

Hard glycerin-gelatin mass.av.oz. 1

Reduce the chloral hydrate to fine powder, add to the melted gelatin mass, stir until dissolved, and pour into warmed bougie molds, and cool by placing on ice.

The product contains 5 per cent. of chloral hydrate.—D.

Cocoa butter, suppositories of chloral hydrate may be prepared by melting together at a gentle heat 26 grains of chloral hydrate, 52 grains of white wax, and 1 av.ounce of cocoa butter, allow to cool until the mass begins to thicken, and pour into well chilled bougie forms.

Suppositories, Glycerin.

Suppositories containing glycerin may be made either with stearin soap (sodium stearate) or with gelatin. The former substance will take up or solidify with a larger proportion of glycerin. Cocoa butter will take up but a small amount of glycerin. Stearin soap suppositories of glycerin are preferred in this country and are recognized by the U. S. P.; gelatin suppositories of glycerin are recognized by the Brit. Pharm. I. U. S. P.:

Glyceringr. 450

Sodium carbonate, monohydratedgr. 8

Stearic acid, pure.....gr. 30

Waterm. 75

To make 10 rectal suppositories. Dissolve the sodium carbonate in the water and add it to the glycerin contained in a dish on a water bath; add the stearic acid and heat the mixture carefully until carbonic acid gas ceases to be evolved, and the liquid is clear. Then pour the melted mass into suitable molds, remove the suppositories when they are completely cold, and preserve them in tightly-stoppered glass vessels.

The molds should be perfectly dry and cold.

These suppositories are one-half the size of those of the U. S. P. 1890.

These suppositories may also be preserved each in a small vial, or each may be dipped into melted paraffin, using paraffin of low melting point. If these suppositories be protected in some such manner there is no necessity for making them freshly as needed as was directed by the U. S. P. 1890.

These suppositories weigh about 50

grains of which about 90 per cent. by weight is glycerin.

II.

Gelatin, cut smallav.oz. 1
Glycerinav.oz. 5
Distilled watersufficient

Place the gelatin in a weighed evaporating dish with enough distilled water to cover it, let stand for 2 minutes, pour off the excess of water, set aside until the gelatin is quite soft, add the glycerin, dissolve on a water bath, evaporate until the mixture weighs 7 av.ounces and 75 grains. Pour the product into suppository molds having capacities equal to 30, 60 or 120 grains of the suppository, or of such other capacities as may be required.—Brit. Pharm.

Each suppository contains 70 p. c. of glycerin.

III.

Wool fat, anhydrousav.oz. 2
Cocoa butterav.oz. 1¼
White waxav.oz. 1½
Glycerinav.oz. 2
Distilled waterfl.dr. 5½

Mix the first three together at a gentle heat, incorporate the glycerin and water, previously mixed, and form into 30 suppositories.—H.

Suppositories, Iodoform.

Iodoformgr. 36
Cocoa buttersufficient
Make 12 suppositories.

Prepare like belladonna suppositories.
—Brit. Pharm.

For gelatin suppositories of iodoform, see next article.

These suppositories may also be prepared by incorporating the iodoform with the cocoa butter in a grated condition, adding a small amount of petrolatum or castor oil to make a suitable mass, divide into the requisite number of parts, and roll into the form of suppositories on a pill board or tile.

Suppositories (Urethral), Iodoform.

I. Prepare like chloral hydrate suppositories, but using 1 part by weight of iodoform and 3 of either hard or soft glycerin-gelatin mass, but less iodo-

form may be used if desired.—D. modified.

II. Formula of the Munich Apoth. Verein:

Iodoform, fine powder.....av.oz. 1
Gelatinav.oz. ½
Glycerinav.oz. 1
Distilled waterfl.dr. 4

Mix the gelatin with the water and glycerin, let stand for 2 hours, then melt the mixture as rapidly as possible on a water bath, add the iodoform previously triturated to a smooth paste with a small amount of water, and pour the warm mixture into forms made of waxed paper.—D.

III. Gum suppositories according to the formula of the Munich Apoth. Verein:

Iodoform, fine powder.....av.oz. 1
Acacia, powdergr. 24
Glycerin, distilled water,
eachsufficient

Mix the two powders intimately, and make a suitable mass with a mixture of equal parts by weight of the glycerin and water (or 4 parts by volume of glycerin and 5 of water), roll out into the form of pencils, and dry at 40 to 50 deg. C.

If less iodoform is desired in the suppositories, it may be partially replaced by powdered boric acid.—D.

IV. Cocoa butter suppositories may be prepared by mixing intimately 1 part by weight of powdered iodoform with 3 parts of grated cocoa butter, making a mass by the addition of a small amount of petrolatum or castor oil, and rolling out in the form of pencils.

Less iodoform may be used if desired.

Suppositories (Urethral), Iron Chlorid.

Solution of ferric chlorid,
U. S. P., gr. 168, or.....m. 130
Glycerite of starch.....av.oz. 1¼
Soft glycerin-gelatin mass.av.oz. 3½

Melt the glycerite and gelatin mass, add the iron solution, and then proceed as with the alum bougies.—D.

Suppositories, Lead, Compound.

Lead acetate, fine powder.....gr. 36
Opium, powdergr. 12
Cocoa butter to make 12 suppositories.

Prepare like belladonna suppositories.
—Brit. Pharm.

The suppositories may also be prepared by triturating with grated cocoa butter, making into a mass with a small amount of castor oil or petrolatum, dividing into the requisite number of parts and forming into suppositories on a pill board or tile.

Suppositories, Mercurial.

Mercurial ointment, 50 p. c. .gr. 60
Cocoa buttergr. 120

Melt the butter with a gentle heat, add the ointment, and, having mixed them thoroughly without applying more heat immediately pour the mixture, before it has congealed, into suitable molds of the capacity of 15 grains; or the liquid mixture may be allowed to cool, and then be divided into 12 equal parts, each of which is to be made into a conical or other convenient form for a suppository.—Brit. Pharm. 1885.

Suppositories, Morphine.

I.

Morphine hydrochlorid.....gr. 3
Cocoa butter to make 12 suppositories.
Prepare like belladonna suppositories.
—Brit. Pharm.

The suppositories may also be prepared by triturating the morphine salt with grated cocoa butter, adding a small amount of petrolatum or castor oil to make a suitable mass, dividing into the requisite number of parts, and forming into suppositories on a pill board or tile.

II. The Brit. Pharm. 1885 also recognized morphine suppositories with soap which were to be prepared as follows:

Morphine hydrochloridgr. 6
Curd soap, powdergr. 100
Glycerite of starchgr. 30
Starch, powdersufficient

Mix the morphine salt with glycerite and soap, add enough starch to form a mass of suitable consistence, and divide this into 12 equal parts, each of which is

to be made into a conical or other convenient form for a suppository.

Less morphine may be used if desired.

III. Eclectic:

Each suppository is to contain 1/3 gr. of morphine sulfate and 32½ gr. of cocoa butter.

Suppositories of Potassium Chlorate, Compound.

Potassium chlorate, fine
powdergr. 180
Alum, fine powder.....gr. 60
Cocoa butterav.oz. 3

Make into 12 vaginal suppositories.—

Eclectic.

Suppositories (Urethral), Potassium Iodid.

Potassium iodid, fine powder.gr. 23
Hard glycerin-gelatin mass.av.oz. 1

Melt the glycerin-gelatin mass on a water bath, add the potassium iodid, when the latter is dissolved, pour the mixture into warmed molds, and cool rapidly by placing on ice.

The bougies contain 5 p. c. of potassium iodid.—D.

Suppositories of Potassium Iodid, Compound.

Potassium iodid, powder....gr. 96
Extract of conium leaves....gr. 36
Cocoa buttergr. 390

Make into 12 rectal suppositories.—

Eclectic.

Suppositories (Urethral), Silver Nitrate.

Silver nitrategr. 2
Distilled waterdrops 3
Hard glycerin-gelatin mass..gr. 400

Dissolve the silver nitrate in the water, add this solution to the glycerin-gelatin mass, previously melted on a water bath, pour into molds which have been warmed, and cool rapidly by placing on ice.

These bougies contain one-half per cent. of the silver salt. They soon become discolored and must be made fresh.—D.

Suppositories, Tannic Acid. (Tannin Suppositories.)

I.

Tannic acidgr. 36
Cocoa butter to make 12 suppositories.
Prepare like belladonna suppositories.

—Brit. Pharm.

Or the suppositories may be prepared by triturating the acid with grated cocoa butter, adding a small amount of petrolatum or castor oil to make a mass, dividing into the requisite number of parts, and rolling these into suppositories on a pill board or tile.

See also Suppositories (Urethral), Tannin.

II. The Brit. Pharm. 1885 also recognized tannic acid suppositories with soap which were to be prepared as follows:

Tannic acidgr. 30
Glycerite of starchgr. 30
Starch powdersufficient
Curd soap, powder.....gr. 100

Make like Suppositories, Morphine No. II, which see.

More tannic acid may be used if desired.

III. Eclectic:

Each suppository is to contain $2\frac{1}{2}$ gr. of tannin and $32\frac{1}{2}$ gr. of cocoa butter.

Suppositories (Urethral), Tannin.

I.

Tanningr. 47
Alcoholfl.dr. 4
Tragacanth, powdergr. 14
Hard glycerin-gelatin mass.av.oz. 2

Dissolve the tannin in the alcohol, triturate this with the tragacanth, incorporate with the melted gelatin mass, expose to the heat of a water bath until the alcohol has evaporated, stirring constantly meanwhile, pour into molds, which have previously been warmed, and cool rapidly by placing on ice.

The product contains 5 per cent of tannin.—D.

II. Formula of the Munich Apoth.

Verein for gum suppositories of tannin:

Tannic acid,
Boric acid, powder, each.equal parts
Mucilage of acacia,
Distilled water,
Glycerin, each.....sufficient

Intimately mix the acids, add enough of a mixture composed of equal parts of the three liquids to form a suitable mass, roll into pencils and dry.—D.

III. Cocoa butter suppositories may

be prepared by triturating the tannin with grated cocoa butter, adding a small amount of petrolatum or castor oil to make a mass, and rolling into pencils on the pill board or tile.

Suppositories of Zinc Sulfate, Compound.

Zinc sulfate, fine powder....gr. 36
Alum, fine powder.....gr. 120
Cocoa butterav.oz. 3

Make into 12 vaginal suppositories.—

Eclectic.

Surgical Dressings.

For the surgical dressings described in this work, see the following headings: Bandages, Plaster Paris; Catgut Ligatures; Cottons; Flannel, Canton; Gauzes; Jutes; Lint; Oakum; Silk Ligatures; Silk Protective; Soap, Surgical; Sponges, Medicated; and Wood Wool.

Syrup of Acacia. (Syrupus Gummosus.)

Acacia, selected pieces.....av.oz. $1\frac{1}{2}$
Sugarav.oz. 12
Distilled waterfl.oz. $6\frac{1}{2}$

Put the acacia into an enameled or porcelain dish, add the water, and stir occasionally until the acacia is dissolved. Add the sugar, place the dish on a water bath, apply a gentle heat, gradually increasing the temperature, and stirring from time to time till the sugar is dissolved. Strain the syrup, if necessary, and enough distilled water through the strainer to make the product measure 15 fluidounces.

This preparation should be made in small quantities, and stored in small, tightly stoppered bottles, in a cool place.

—U. S. P.

In the U. S. P. 1890, it was made by mixing 1 volume of fresh mucilage of acacia with 3 volumes of simple syrup.

Syrup of Albuminate of Iron.

See Syrup of Iron Albuminate.

Syrup of Almond. (Orgeat Syrup—Syrupus Amygdalarum—Mandel Saft or Syrup.)

I.

Spirit of bitter almond.....m. 80
Orange flower water.....fl.dr. 13
Simple syrup, to make.....fl.oz. 16

Mix them.—U. S. P.

This preparation is quite different from that of the U. S. P. 1890 which was an emulsion of almonds converted into a syrup by the addition of sugar. For those who prefer the old formula it is here given.

II.

Sweet almondav.oz.	2	gr.	150
Bitter almondgr.	300		
Sugarav.oz.	3	1/4	
Orange flower waterfl.dr.	13		
Distilled waterfl.oz.	2		
Simple syrup, to makefl.oz.	16		

Blanch all the almonds by immersion in hot water, removing the skins, and drying on a clean cloth. Then rub them in a mortar with 1 1/2 av.ounces of sugar, and 1/2 fluidounce of distilled water to a smooth paste. Mix this well with the orange flower water and 3 1/2 fluidounces of simple syrup, and strain with strong expression. To the residue add 1 1/2 fluidounces of distilled water, and express again. In the strained liquid dissolve the remainder of the sugar, without heat, adding enough syrup to make the product measure 16 fluidounces.—U. S. P. 1890.

Keep the product in well-stoppered, completely filled bottles, in a cool place.

II.

Sweet almondav.oz.	3	1/4	
Bitter almondav.oz.	3	4	
Distilled waterfl.oz.	9	1/2	
Sugarav.oz.	15		

Macerate the almonds in water for 12 hours, remove the skins, heat the almonds with the water to make an emulsion, strain and dissolve the sugar in the colature by bringing the whole to a boil. The product should weigh 25 av.ounces.—Germ. Pharm.

Syrup of Althea. (Syrup of Marsh-mallow—Eibisch Syrup or Saft.)

I.

Althea root, deprived of the bark and cut into small piecesgr.	360		
Alcoholfl.dr.	4		
Glycerinfl.oz.	1	1/2	
Sugarav.oz.	11	1/2	
Distilled water, to makefl.oz.	16		

Wash the drug with cold water, then macerate it with 6 1/2 fluidounces of the water previously mixed with alcohol,

during 1 hour, stirring frequently, and strain without expressing the residue. In the strained liquid dissolve the sugar by agitation without heat, add the glycerin, and then enough water to make 16 fluidounces.—N. F. Appendix and U. S. P. 1890.

Keep the product in well-stoppered, completely filled bottles, in a cool place.

II.

Althea root, cut coarsegr.	175		
Alcoholm.	110		
Distilled waterfl.oz.	9	1/2	
Sugarav.oz.	12		

Rinse the drug off with water, add the alcohol and water, macerate for 3 hours, agitating occasionally, strain without expression, and in 8 av.ounces of the colature dissolve the sugar by the aid of heat, filter, and bring the filtrate to the weight of 20 av.ounces, if necessary, by the addition of simple syrup.—Germ. Pharm.

Syrup of Apomorphine Hydrochlorid.

Apomorphine hydrochloridgr.	4		
Hydrochloric acid, dilutedm.	12		
Alcoholfl.dr.	5	1/2	
Distilled waterfl.dr.	5	1/2	
Simple syrup, to makefl.oz.	16		

Mix the alcohol and water, add the apomorphine salt to it, dissolve by agitation, add the acid, and mix with the syrup.—Brit. Form.

Syrup of Aralia, Compound. (Compound Syrup of Spikenard—Alterative Syrup.)

The following is a practical formula for making this Eclectic syrup:

Spikenard rootgr.	270		
Burdockgr.	270		
Yellow dockgr.	270		
Guaiac woodgr.	270		
Sassafras barkgr.	180		
Prickly ash barkgr.	180		
Elder flowersgr.	180		
Blue flag rootgr.	180		
Sugarav.oz.	10		
Diluted alcoholsufficient			

Mix the drugs and reduce to a coarse powder, extract in the usual way by percolation, with diluted alcohol; obtain 10 fluidounces of percolate in which dissolve the sugar by percolation and to this solution add, if necessary, enough simple syrup to make 16 fluidounces.

Syrup, Aromatic.

Tincture of orange (from fresh bitter peel), Brit. Pharm.f.oz. 4
 Cinnamon waterf.oz. 4
 Simple syrupf.oz. 8

Mix the tincture and water, shake the mixture with a little talcum, filter, and add the syrup.—Brit. Pharm.

Syrup of Asafetida.

Asafetida, select gum.....av.oz. $\frac{1}{2}$
 Boiling waterf.oz. 8
 Sugarav.oz. 13

Rub the gum with a portion of the water to a smooth paste, add the remainder of the water and sugar, dissolve by aid of gentle heat and strain.—Eclectic modified.

Syrup of Bayberry.

The following has been credited to Thomsonian practice:

Bayberry barkpounds 2
 Diluted alcoholgall. 1
 Sugarpounds 2

Macerate the bark with the diluted alcohol in a warm place for two days, strain, evaporate the colature to 1 quart and in this dissolve the sugar.

Syrup of Blackberry Root. (Syrup of Rubus.)

F'l'd ext. of blackberry root.f.oz. 4
 Simple syrupf.oz. 12
 —U. S. P.

Syrup of Blackberry, Aromatic. (Syrupus Rubi Aromaticus.)

Blackberry rootav.oz. 4, gr. 80
 Cinnamongr. 240
 Nutmeggr. 240
 Clovegr. 120
 Allspicegr. 120
 Sugarav.oz. 22
 Diluted alcohol, blackberry juice, each, to make....f.oz. 32

Reduce the blackberry root and the aromatics to a moderately coarse (No. 40) powder, and percolate it, in the usual manner, with the diluted alcohol, until 8 fluidounces of percolate are obtained. To this add $14\frac{1}{2}$ fluidounces of blackberry juice, and dissolve the sugar in the liquid by agitation. Lastly, add enough blackberry juice to make 32 fluidounces.—N. F.

The above really makes more than 32

fluidounces of product. The blackberry juice should be reduced to 12 fluidounces and the sugar to 20 av.ounces.

This is similar to Cordial, Blackberry, which see.

Syrup of Black Cohosh, Compound. (Compound of Syrup of Actæa or Cimicifuga.)

Fluid ext. of black cohosh.f.ldr. 5
 Fluid extract of licorice...f.ldr. $2\frac{1}{2}$
 Fluid extract of senega....f.ldr. $2\frac{1}{2}$
 Fluid extract of ipecac.....m. 75
 Wild cherry, moderately fine powdergr. 300
 Purified talcumgr. 120
 Sugarav.oz. 11
 Water, to make.....f.oz. 16

Mix the wild cherry with 5 fluidounces of water, and allow it to macerate during one hour. Then add to it the fluid extracts and the talcum, and stir or agitate the mixture frequently and thoroughly during about 15 minutes. Transfer it to a wetted filter, and, when the liquid ceases to drop from the funnel, wash the contents of the filter with water to obtain 8 fluidounces of filtrate. In this dissolve the sugar by agitation, and add enough water, previously passed through the filter, to make 16 fluidounces.—N. F.

Syrup of Bloodroot. (Syrupus Sanguinariae.)

Bloodroot, No. 20 powder.av.oz. $3\frac{3}{4}$
 Acetic acid, 36 per cent....f.oz. 2
 Sugarav.oz. $13\frac{1}{2}$
 Water, to make.....f.oz. 16

Mix the acid with 6 fluidounces of water, moisten the bloodroot with a sufficient quantity of this menstruum, and allow it to macerate for 2 hours. Then pack it in a glass percolator, and percolate in the usual manner, first with the remainder of the menstruum previously prepared, and afterwards with water, until 12 fluidounces of percolate are obtained, or until the drug is practically exhausted. Evaporate the percolate, at a moderate heat, to $7\frac{1}{4}$ fluidounces. In this dissolve the sugar with a gentle heat, if necessary, and add enough water to make 16 fluidounces.

If a somewhat weaker acetic acid be at hand then one of 36 p. c. strength,

proportionately more of it may be employed and correspondingly less water.

Each fluidram represents about 13 gr. of bloodroot.—N. F. and Eclectic.

Syrup of the Bromids. (Syrupus Bromidorum.)

I.

Potassium bromid	gr. 600
Sodium bromid	gr. 600
Ammonium bromid	gr. 360
Calcium bromid	gr. 180
Lithium bromid	gr. 60
Comp. tincture of cudbear..	fl.dr. 4
Tincture of vanilla.....	fl.oz. 1
Sugar	av.oz. 10
Water, to make.....	fl.oz. 16

Dissolve the bromid in 7½ fluidounces of water, dissolve the sugar in this solution, and the tinctures, and strain.

Each fluidram contains about 15 gr. of the combined bromids.—Cinc. Acad. Pharm.

II.

Potassium bromid	gr. 600
Sodium bromid	gr. 600
Ammonium bromid	gr. 360
Calcium bromid	gr. 180
Lithium bromid	gr. 60
Tincture of vanilla	fl.dr. 4
Comp. tincture of cudbear..	fl.dr. 2
Comp. syrup sarsaparilla..	fl.oz. 7¼
Simple syrup, to make....	fl.oz. 16

Dissolve the bromids in the sarsaparilla syrup and 5 fluidounces of simple syrup, then add the tinctures and enough simple syrup to make 16 fluidounces.—N. F.

Syrup of Buckthorn. (Syrup of Buckthorn Bark.)

This may be prepared as follows:

Fluid extract of buckthorn bark	fl.oz. 4
Simple syrup	fl.oz. 12

This is used principally as a cathartic for dogs.

Syrup of Buckthorn Berries. (Syrupus Spinæ Cervinæ—Syrupus Domesticus—Syrupus Rhamni Cathartice.)

Sugar	av.oz. 13½
Fermented juice of buckthorn berries.....	sufficient

Dissolve the sugar in 7½ fluidounces of the juice, with the aid of a gentle heat, allow the syrup to cool, then add

enough of the juice to make 16 fluidounces and strain if necessary.

This preparation is practically identical with that of the Germ. Pharm.

The species of buckthorn to be used is the *Rhamnus Cathartica* Linné, native of Europe, and naturalized, to some extent, in the United States. If the fresh berries cannot be obtained, the imported fermented juice may be used in preparing this syrup.—N. F.

Syrup of Butyl Chloral.

See Syrup of Croton Chloral.

Syrup of Calcium Chlorhydrophosphate. (Syrup of Chlorhydrophosphate of Lime.)

Calcium phosphate, precipitated	gr. 128
Tincture of lemon peel....	fl.dr. 2½
Hydrochloric acid, U. S. P., water, simple syrup, each, to make	fl.oz. 16

Triturate the calcium phosphate with 4 fluidrams of water, and dissolve it with the aid of the acid, avoiding an excess. Then add the tincture, filter the liquid, and wash the filter with a mixture of 4 fluidrams each of water and of syrup. Lastly, add enough syrup to the filtrate to make 16 fluidounces.

Each fluidram contains 1 gr. of calcium phosphate.—N. F.

Syrup of Calcium Glycerophosphate.

Such a preparation may be made as follows:

Calcium glycerophosphate....	gr. 64
Citric acid	gr. 8
Water	fl.oz. 6
Sugar	av.oz. 9

Dissolve the calcium salt and acid in the water, then dissolve the sugar without the aid of heat, and then add enough simple or flavored syrup or glycerin to make 16 fluidounces.

See also Syrup of Glycerophosphate, Compound.

Syrup of Calcium Hypophosphite.

Syrup of Calcium and Iron Hypophosphites.

Syrup of Calcium, Manganese and Potassium Hypophosphites.

Syrup of Calcium and Sodium Hypophosphite.

See Syrups of the Hypophosphites.

Syrup of Calcium Iodid.

Iodin	gr. 560
Iron wire, fine, bright, and finely cut	gr. 200
Precipitated calcium carbon- ate	gr. 250
Sugar	av.oz. 12
Distilled water, simple syrup, each, to make.....	fl.oz. 16

Mix the iron wire with 415 grains of iodine and 3 fluidounces of distilled water, and apply a gentle heat, until the iodine is combined, and the liquid has acquired a greenish color. Filter the liquid through a small filter into a flask, containing the remainder of the iodine, wash the filter with 1 fluidounce of distilled water, and heat the solution gently, taking care that no iodine is lost by evaporation. Heat 4 fluidounces of distilled water in a capacious capsule to boiling, and add to it small alternate portions, first of the calcium carbonate, and then of the solution of iron iodide, in small portions at a time, stirring briskly and waiting until the violence of the reaction moderates before adding a fresh portion. From time to time, add a little distilled water, to replace that lost by evaporation. When all the iron solution has been added, continue heating the mixture until it is quietly boiling, then filter it through a wetted filter, and wash the latter with enough distilled water to make the product, when cold, measure 8 fluidounces. In this dissolve the sugar by agitation, then make up the volume with simple syrup to 16 fluidounces, and strain, if necessary.

Each fluidram contains about 5 gr. of calcium iodide.—N. F.

A convenient form of iron for the above preparation is the so-called "card teeth."

This preparation may also be made by dissolving 640 grains of calcium iodide in 2 fluidounces of water, and adding enough simple syrup to make 16 fluidounces.

This preparation will not be as satisfactory as the above.

Syrup of Calcium Lactophosphate.

Precipitated chalk	gr. 185
Lactic acid	fl.oz. 1
Phosphoric acid	fl.dr. 43/4
Orange flower water.....	fl.dr. 7
Sugar	av.oz. 12
Distilled water, to make.....	fl.oz. 16

To the lactic acid mixed with 13 fluidrams of distilled water, and contained in a capacious mortar, gradually add the chalk, in portions, until it is dissolved, constantly stirring the mixture meanwhile. Then add the phosphoric acid, diluted with 7 fluidrams of water, and triturate until the precipitate first formed is dissolved. Add 1½ fluidounces of distilled water, and filter, rinsing the mortar with 6 fluidrams of water, and passing the rinsings through the filter. To the mixed filtrates add the orange flower water, and having added the sugar, dissolve by agitation, without heat, and strain. Lastly pass enough distilled water through the strainer to make the product measure 16 fluidounces, and mix thoroughly.—U. S. P.

It is very important that the acids shall be of full strength, or if not that a proportionately larger amount be employed. The lactic acid should contain 75 per cent. of absolute acid, but the commercial article usually falls short of this standard; the phosphoric acid should contain 85 per cent. of absolute acid. If the 50 per cent. phosphoric acid be used, it must be employed in the above mixture in the proportion of 1 fluidounce.

The formula of the Brit. Pharm. is practically identical with that of the U. S. P. It differs only in directing the lactic acid to be diluted with 4 times its volume of water before adding the chalk, less water being used subsequently.

This syrup is sometimes made from the commercial so-called "calcium lactophosphate" by dissolving 200 grains of it in some simple syrup, adding orange flower water, 1 fluidram of hydrochloric acid, and enough simple syrup to make

16 fluidounces. The product is, however, not satisfactory.

Syrup of Calcium Lactophosphate with Iron. (Syrup of Lactophosphate of Lime with Iron.)

Iron lactate, in crusts.....gr. 64
Potassium citrategr. 64
Waterfl.oz. 1
Syrup of calcium lactophosphate, to make.....fl.oz. 16

Dissolve the iron lactate and potassium citrate in the water with the aid of heat, and add enough syrup of calcium lactophosphate to make 16 fluidounces.

Each fluidram contains $\frac{1}{2}$ gr. of iron lactate and about $\frac{1}{4}$ gr. of calcium lactate (or about $\frac{3}{8}$ gr. of so-called calcium lactophosphate).—N. F.

This latter statement of the N. F. is an error; it should read about $1\frac{1}{4}$ gr. of calcium lactate (or about $2\frac{1}{2}$ of so-called calcium lactophosphate).

Syrup of Calcium Phosphate.

I. Wiegand's formula:

Calcium phosphate, precipitatedav.oz. $1\frac{1}{4}$
Hydrochloric acidfl.dr. $4\frac{1}{2}$
Sugarav.oz. 14
Waterfl.oz. 8

Dissolve the calcium phosphate in the acid previously mixed with the water, filter, add the sugar, dissolve by agitation, and strain.

II. Durand's formula:

Calcium phosphate, precipitatedgr. 256
Phosphoric acid, glacial.....gr. 240
Sugarav.oz. 14
Distilled waterfl.oz. 8
Spirit of lemondrops. 24

Mix the calcium phosphate with the water, heat moderately, gradually add the acid until all the calcium salt is dissolved, replace the water lost by evaporation, filter, dissolve the sugar in the filtrate, strain, if necessary, and add the spirit.

Syrup of Canada Snake-Root, Compound. (Compound Syrup of Asarum.)

Canada snake-root, moderately coarse powder.....av.oz. 1
Cochineal, fine powder.....gr. 11
Potassium carbonategr. 18
Wine of ipecacfl.dr. 4

Sugarav.oz. $11\frac{1}{2}$
Alcoholfl.oz. 3
Water, to make.....fl.oz. 16

Mix the Canada snake-root intimately with the cochineal and potassium carbonate, previously triturated together. Moisten the powder with a sufficient quantity of a menstruum prepared by mixing the alcohol with 6 fluidounces of water, and allow it to macerate, in a covered vessel, for 24 hours. Then transfer it to a small percolator, and pour on the remainder of the menstruum. Allow the percolation to proceed slowly, and then follow up the menstruum by water, until 8 fluidounces of percolate are obtained. To this add the wine of ipecac, and afterwards the sugar, and dissolve the latter by agitation. Finally, add enough water, previously passed through the percolator, to make 16 fluidounces.

Each fluidram represents about $3\frac{1}{2}$ gr. of Canada snake-root.—N. F.

Syrup of Cascara, Aromatic.

Fluid-extract of cascara sagrada, Brit. Pharm.....fl.oz. 4
Tincture of orange (from fresh bitter orange peel).....fl.oz. 1
Alcoholfl.dr. 4
Cinnamon waterfl.oz. $1\frac{1}{2}$
Simple syrupfl.oz. 3

—Brit. Pharm.

The above may be practically duplicated by mixing 4 fluidounces of the fluid extract and 3 fluidounces each of the syrups of orange and cinnamon.

See also Syrup of Cascara Sagrada.

Syrup of Cascara Sagrada.

Fluid extract of cascara sagrada, Brit. Pharm....fl.oz. 2
Fluid extract of licorice....fl.oz. $1\frac{1}{2}$
Carminative tincturefl.dr. 1
Simple syrup to make.....fl.oz. 10

—Brit. Form. 2nd edition.

See also Syrup of Cascara, Aromatic.

Syrup of Ceanothus, Compound. (Compound Syrup of Red-Root—Cooper's Consumptive Syrup.)

The following is a practical formula for this Eclectic preparation:

Ceanothus (red root or New Jersey tea).....av.oz. $\frac{1}{2}$
Lactuca elongata (wild let-

tuce leaves)	av.oz.	1/2
Black cohosh	av.oz.	1/4
Pleurisy root	gr.	55
Canada snakeroot	gr.	55
Lobelia herb	gr.	28
Bloodroot	gr.	28
Sugar	av.oz.	10
Alcohol, water, each.....	sufficient	

Reduce the mixed drugs to moderately coarse powder, and extract by percolation with a mixture of 1 volume of alcohol and 2 of water to obtain 10 fluidounces; in the latter dissolve the sugar by agitation, strain, and add simple syrup, if necessary, to make 16 fluidounces of product.

Syrup of Cherries. (Syrupus Cerasorum.)

Crush black, sour cherries with the stones to a pulp, set aside in a covered vessel so that it will be at a temperature of about 20 deg. C., and stir frequently. From time to time filter a small quantity of juice and when this no longer produces a cloudiness with half its volume of alcohol, the entire quantity of juice is to be strained with expression and filtered. To every 8 fluidounces of filtered juice, add 15 av.ounces of sugar, dissolve by agitation and strain.—Germ. Pharm.

Syrup of Chloral.

I.

Chloral hydrate	gr.	320
Distilled water	fl.dr.	6
Simple syrup to make.....	fl.oz.	4

Dissolve the chloral in the water and add the syrup.—Brit. Pharm.

II.

Chloral hydrate	gr.	120
Distilled water	fl.dr.	2
Simple syrup	fl.oz.	3 1/2
Spirit of peppermint.....	drops	10

Dissolve the chloral in the water, add the syrup, and then the spirit.—Codex.

Syrup of Cinchona. (Syrupus Chinæ.)

I.

Tincture of cinchona.....	fl.oz.	3
Simple syrup	fl.oz.	13
—H.		

II. A more agreeable preparation is the following from the Germ. Form.:

Red cinchona, coarse powder	av.oz.	1 1/2
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Cinnamon, coarse powder...	gr.	160
Port wine	fl.oz.	9 1/2
Sugar	av.oz.	12

Mix the drugs with the wine, macerate for 2 days with occasional agitation, filter, and in 8 av.ounces of filtrate dissolve the sugar.

Syrup of Cinnamon. (Syrup of Cassia.)

Cinnamon (Saigon), moderately coarse	gr.	720
Alcohol	fl.dr.	6
Sugar	av.oz.	13
Cinnamon water, to make.....	fl.oz.	16

Mix the alcohol with 7 fluidounces of cinnamon water, moisten the cinnamon with a sufficient quantity of this menstruum and allow it to macerate for about 2 hours. Then transfer it to a small percolator, and percolate, in the usual manner, using first the remainder of the menstruum above directed, and afterwards, cinnamon water. Collect the first 8 fluidounces of the percolate separately, and dissolve in it the sugar. Then collect an additional quantity of percolate and add it to the syrup, so as to make 16 fluidounces.—N. F.

The above preparation is to be used for that of the Germ. Pharm. which is made by maceration and all parts by weight.

Syrup of Citric Acid.

Citric acid	gr.	72
Water	fl.dr.	1 1/4
Tincture of fresh lemon peel	fl.dr.	1 1/4
Simple syrup to make.....	fl.oz.	16

Dissolve the acid in the water, mix this solution with 8 fluidounces of syrup, add the tincture, and then the remainder of the syrup.—U. S. P.

Syrup of Cocillana.

The following formula has been suggested:

Fluid extract of cocillana...	fl.oz.	1 1/2
Acetic acid	fl.dr.	1 1/4
Glycerin	fl.oz.	1 1/2
Sugar	av.oz.	11
Water to make.....	fl.oz.	16

Dilute the fluid extract with the acid mixed with 5 fluidounces of water, shake well, and filter clear, adding through the filter enough water to make

8 fluidounces. To the filtrate add the glycerin and sugar, agitate occasionally until the latter is dissolved, strain, and add, if necessary, through the strainer water enough to make 16 fluidounces.

Syrup of Codeine.

I.
Codeine sulfategr. 19
Simple syrupfl.oz. 4
Reduce the codeine sulfate to a fine powder and dissolve it in the syrup previously warmed.

Each fluidram contains about $\frac{1}{2}$ gr. of codeine sulfate.—N. F.

II.
Codeine phosphategr. 8
Distilled waterm. 50
Simple syrup, to make.....fl.oz. 4
Dissolve the codeine salt in the water and add the syrup.—Brit. Pharm.

Each fluidram contains $\frac{1}{4}$ gr. of codeine phosphate.

The phosphate of codeine should be preferred to the sulfate because it is much more soluble.

III.
Codeine (alkaloid)gr. 4
Alcoholfl.dr. 2
Simple syrup, to make.....fl.oz. 4
Dissolve the codeine in the alcohol and add the syrup.—Codex.

Syrup of Coffee.

Coffee roastedav.oz. $4\frac{1}{2}$
Sugarav.oz. 13
Watersufficient

Introduce the coffee, reduced to a moderately coarse powder, into a suitable vessel, pour upon it 8 fluidounces of boiling water, cover it well, and boil for 5 minutes. Allow to become cold, keeping the vessel well covered, strain off the liquid and pass enough water through the strainer to make the strained liquid, when cold, measure 8 fluidounces. In this dissolve the sugar, by agitation, without heat, strain through muslin, and add enough water through the strainer to make 16 fluidounces.

It is recommended that a mixture of equal parts of the commercial varieties of coffee known as "Java" and "Mocha" be employed for this purpose. The coffee may also be exhausted by percola-

tion, but special arrangements are then necessary to maintain the menstruum at the proper temperature.—N. F.

Syrup of Corydalis, Compound. (Compound Syrup of Turkey Corn—Scudder's Alterative.)

The following is a practical formula for making this Eclectic preparation:

Turkey cornav.oz. $1\frac{3}{4}$
Twin-leaf rootgr. 390
Blue flag rootgr. 195
Sheep laurel leavesgr. 195
Sugarav.oz. 10
Alcohol, water, each.....sufficient

Reduce the mixed rugs to powder and extract by percolation in the usual way so as to obtain 10 fluidounces of product, using as a menstruum a mixture 1 volume of alcohol and 2 of water; in the percolate dissolve the sugar by agitation or percolation, and add to the solution enough simple syrup, if necessary, to make 16 fluidounces.

Syrup of Croton Chloral. (Syrup of Butyl Chloral.)

I.
Croton chloral hydrate.....gr. 133
Simple syrup, to make....fl.oz. 8
Dissolve the croton chloral in the syrup previously made hot.—Brit. Form.

II.
Croton chloral hydrate.....gr. 170
Glycerinfl.dr. 5
Extract of licorice.....gr. 340
Waterfl.oz. $8\frac{1}{2}$
Simple syrupfl.oz. $6\frac{1}{2}$

Add the croton chloral to the glycerin, previously warmed, and triturate in a mortar until dissolved. Dissolve the extract in the water, mix the two solutions, and add the syrup.—Eclectic.

Syrup of Cubeb.

This formula may be used:
Fluid extract of cubeb....fl.oz. 2
Magnesium carbonateav.oz. $\frac{1}{2}$
Sugarav.oz. 12
Oil of bitter almond.....drop 1
Orange flower water.....fl.oz. 2
Water, to make.....fl.oz. 16

Triturate the fluid extract with the magnesium carbonate, then add slowly, with constant trituration, 2 av.ounces of the sugar in small portions; when thoroughly mixed, add gradually first the orange flower water, and then 5 fluid-

ounces of water, triturating the mixture until the sugar is dissolved; filter and add sufficient water to make the filtrate measure 10 fluidounces in which the sugar is to be dissolved without heat; to the solution add the oil dissolved in a small quantity of alcohol, and then enough water to make 16 fluidounces.

Syrup of Dextrin.

Starchparts 20
Barley malt, ground.....parts 3
Waterparts 60

In a water bath, heat the water to about 30 deg. C., introduce the malt and gradually increase the temperature until 60 deg. C. is reached. To the starch add some tepid water to form what is generally known as "milk of starch." This mixture is now to be added to the infusion of malt in small portions at a time, stirring and keeping the temperature about 65 to 70 deg. C. for an hour or two, or until the infusion, when tested with iodine, gives no reaction for starch. Now increase the heat to near the boiling point, so as to coagulate the albuminous matter, strain and filter, and evaporate to a syrupy consistency.—H.

The Belgian Pharmacopœia directs two parts of malt instead of three parts.

The above is the method of making syrup of dextrin, or properly speaking "maltose syrup," which is different from glucose, but there is no objection as a rule to using a good quality of commercial glucose when syrup of dextrin is prescribed or demanded.

Syrup, Dysentery.

See Thomsonian Remedies.

Syrup of Ether.

Etherfl.dr. 2½
Alcoholfl.dr. 6½
Sugarav.oz. 9
Distilled waterfl.oz. 8

Mix in a bottle and agitate until the sugar is dissolved.—Eclectic.

Syrup of Eucalyptus.

This has been suggested:

Fluid extract of eucalyptus.fl.dr. 10
Magnesium carbonate ...av.oz. ¾
Waterfl.oz. 8
Sugarav.oz. 13

Triturate the fluid extract with the

magnesium carbonate, add the water gradually, let stand one hour, filter, and in the filtrate dissolve the sugar without heat.

Syrup of Eucalyptus, Compound.

A preparation of this kind may be made as follows:

Eucalyptus leavesgr. 96
Elecampanegr. 120
Comfreygr. 120
Horehoundgr. 120
Licorice rootgr. 40
Fresh peel of one orange,
Fresh peel of one lemon,
Sugarav.oz. 12
Alcoholfl.oz. 1
Waterfl.oz. 12

Mix the first five drugs, reduce to coarse powder, add the peels in a grated condition, place in a bottle, add the alcohol and water, stopper the bottle and heat gently on a water bath for a few hours, agitating occasionally; allow to cool, strain with expression, dissolve the sugar in the colature, and add through the strainer enough water to make the liquid measure 16 fluidounces.

To this syrup is added either ammonium chlorid or morphine acetate; either should be added before adding the sugar. Of the former, 256 grains should be used, of the latter, 4 grains.

Syrup of Fox Lungs. (Fuchs-Lungen Saft—Syrupus Pulmonum Vulpium.)

This is an old preparation no longer made from fox lungs, if it was ever made from them at all. In England it is stated that syrup of red poppy is usually dispensed. In some places syrup of tolu is given, in others syrup of squill, and even simple syrup colored with licorice. The syrup is used for the treatment of coughs, generally along with paregoric. In some places, the following is said to be given:

Extract of licorice.....av.oz. ½
Waterfl.oz. 16
Sugarav.oz. 24
Wine of ipecac.....fl.oz. 1

Dissolve the extract in the water, add the sugar, dissolve again, and add the wine.

Others dispense syrup of althea, syrup of poppy, oxymel, and pectoral elixir.

Hager gives the following:

Pectoral elixir	f℥.dr. 10
Syrup of senna.....	f℥.dr. 22
Simple syrup	f℥.dr. 21
Glycerin	f℥.dr. 10

Syrup of Garlic. (Syrupus Allii.)

I.

Garlic, fresh, sliced and bruised	av.oz. $3\frac{1}{4}$
Sugar	av.oz. $13\frac{1}{4}$
Diluted acetic acid, to make.....	f℥.oz. 16

Macerate the garlic with 5 fluidounces of the acid for 4 days, and express the liquid, avoiding the use of metallic utensils. Then mix the residue with 3 fluidounces more of the acid, and again express. Mix the expressed liquids and filter. Mix the filtrate with the sugar in a suitable vessel, and stir or agitate until the sugar is dissolved. Lastly add enough diluted acetic acid to make the product measure 16 fluidounces.

Keep the syrup in well-stoppered, completely-filled bottles, in a cool place.—N. F. Appendix and U. S. P. 1890.

The sugar may also be dissolved by percolation as described under simple syrup. See Syrup, Simple.

II. Thomsonian (from the Materia Medica):

Mash garlic, add warm water, allow to stand one-half hour, but not heated, strain, and add sugar.

See also Syrup of Garlic, Artificial.

Syrup of Garlic, Artificial.

The following has been credited to Thomsonian practice:

Tincture of asafetida.....	f℥.dr. 1
Acetic acid, concentrated.....	f℥.dr. 6
Simple syrup	f℥.oz. 16

Syrup of Ginger.

Fluid extract of ginger.....	f℥.dr. 4
Alcohol	f℥.dr. $2\frac{1}{2}$
Magnesium carbonate	gr. 75
Sugar	av.oz. $13\frac{3}{4}$
Water, to make.....	f℥.oz. 16

Mix the fluid extract and alcohol, triturate this in a mortar with the magnesium carbonate and 1 av.ounce of

sugar. Then gradually add $7\frac{1}{2}$ fluidounces of water with constant trituration, and filter. Dissolve the remainder of the sugar in the filtrate, with the aid of a gentle heat, strain the syrup while hot and add enough water to make the liquid measure 16 fluidounces.—U. S. P.

The sugar may also be dissolved in the liquid by percolation as described under simple syrup. See Syrup, Simple.

The Brit. Pharm. directs making $6\frac{1}{2}$ fluidrams of tincture of 185 grains of ginger in fine powder by percolation with alcohol, then to this add enough simple syrup to make 16 fluidounces.

Syrup of Glucose.

Liquid glucose, of commerce.....	av.oz. 1
Simple syrup	av.oz. 2

Mix by the aid of a gentle heat.—Brit. Pharm.

This is used by the Brit. Pharm. for some pill masses.

Syrup of Glycerophosphates, Compound.

Calcium glycerophosphate....	gr. 128
Potassium glycerophosphate....	gr. 64
Sodium-glycerophosphate....	gr. 64
Magnesium glycerophosphate....	gr. 64
Iron glycerophosphate, scales....	gr. 32
Caffeine citrate	gr. 64
Citric acid	gr. 24
Strychnine hydrochlorid.....	gr. $1\frac{2}{3}$
Cudbear	gr. 85
Chloroform	m. 16
Alcohol	m. 32
Sugar	av.oz. $11\frac{1}{4}$
Distilled water, to make....	f℥.oz. 16

Boil the cudbear with 8 fluidounces of the water for 10 minutes, filter, in the warm filtrate dissolve the glycerophosphates, caffeine, acid and strychnine, then add the sugar, dissolve this by the aid of heat, and when cold add the mixed chloroform and alcohol, and finally the remainder of the water.—Brit. Pharm.

Syrup of (Ammoniated) Glycyrrhizin.

Ammoniated glycyrrhizin....	gr. 360
Simple syrup, to make....	f℥.oz. 16

Dissolve the glycyrrhizin in the syrup by the aid of a gentle heat.

This preparation is intended chiefly as

a vehicle for disguising the taste of quinine and other bitter substances.

It is sweeter in taste than the ordinary syrup of licorice, and is a splendid substitute for the latter.—Cinc. Acad. Pharm.

A preparation of this kind may also be prepared as follows:

Ammoniated glycyrrhizin....	gr. 180
Glycerin	fl.oz. 1
Water	fl.oz. 8
Sugar	av.oz. 12

Heat the water, add the glycyrrhizin, stir until dissolved, filter, add the sugar and glycerin, shake until dissolved, and strain.

Syrup of Guaiac.

The following has been suggested:

Guaiac resin	av.oz. 1½
Caustic potassa, pure.....	gr. 10
Sugar	av.oz. 13
Water, to make.....	fl.oz. 16

Dissolve the potassa in 8 fluidounces of water, macerate the resin, previously reduced to coarse powder, with this liquid for 3 days, agitating occasionally, filter, adding through the filter water enough to make 8 fluidounces; and in the latter dissolve the sugar by agitation.

Syrup of Helianthus.

See Syrup of Sunflower.

Syrup of Helianthus, Compound.

This Eclectic syrup was directed by Prof. R. S. Newton to be prepared as follows:

Sunflower seed, bruised or ground	av.oz. 2
Schiedam schnapps or Holland gin	fl.oz. 8
Sugar	av.oz. 5¾
Absolute alcohol, ether, water, each	sufficient

Place the seed in a bottle, cover with ether, close the bottle lightly, and macerate at a temperature not exceeding 32 deg. C. for 14 days, agitating frequently. Decant the ether and express the seed. Bruise the resulting cake of compressed seed and pass vapor of absolute alcohol through it until the liquid comes off col-

orless. Mix the ethereal and alcoholic liquids and evaporate so to dissipate the ether and alcohol.

Through the cake remaining and transferred to a percolator, pass steam until 4½ fluidounces of liquid are obtained. Evaporate this to 2 fluidounces, add the sugar, dissolve by heat, skim the liquid, and filter through sand. To the liquid when cold add the schnapps or gin, and then incorporate the ethero-alcoholic residue.

If a diuretic effect is desired, it is recommended to add to the above 1 fluidram each of oils of stillingia and juniper.

In practice, this formula would require considerable modification. The oil should be extracted from the seeds with stronger ether by the same process as oleo-resins are prepared, subsequently evaporating the ether. Then dry the marc, extract it with hot water, evaporating the liquid, if necessary to 2 fluidounces. To the latter add the gin and the sugar, dissolve the latter by agitation, filter through paper if necessary, and incorporate the ethereal residue.

This formula has been simplified as follows in the new edition of King's Dispensatory as follows:

Sunflower seed, bruised.....	av.oz. 2¼
Sugar	av.oz. 6
Gin	fl.oz. 8
Water	sufficient

Pour 16 fluidounces of water on the seed, bring to a boil, strain, evaporate the liquid to 6 fluidounces, in this dissolve the sugar, and add the gin.

This is almost the same as the Syrup of Sunflower, which see.

Syrup of Hemidesmus. (Syrup of Indian Sarsaparilla.)

Hemidesmus root, bruised..	av.oz. 2
Water, boiling	fl.oz. 10
Sugar	av.oz. 14

Pour the water on the root, macerate for 4 hours, strain, set aside until clear and in the clear liquid dissolve the sugar by the aid of a gentle heat.—Eclectic and Brit. Pharm.

Syrup of Hoarhound, Compound.
(Compound Syrup of Marrubium
—Pulmonary Balsam or Syrup.)

The following is a practical formula for this Eclectic preparation:

Red root (Ceanothus root).....	gr. 290
Elecampane	gr. 290
Spikenard	gr. 290
Comfrey	gr. 290
Wild cherry bark	gr. 290
Horehound	gr. 290
Bloodroot	gr. 145
Sugar	av.oz. 10
Alcohol, water, each.....	sufficient

Mix the drugs, reduce to fine powder and extract by percolation in the usual way so as to obtain 10 fluidounces of percolate, using as a menstruum a mixture of 2 volumes of water and 1 of alcohol; in the percolate dissolve the sugar by agitation or percolation, and to this solution add enough simple syrup, if necessary, to make 16 fluidounces.

Syrup of Horseradish, Compound.
(Syrupus Cochleariæ Compositus.)

Fresh root of horseradish, grated	av.oz. 1
Boneset	av.oz. ½
Canada snakeroot	av.oz. ¼
Sugar	av.oz. 14
Boiling water, Diluted acetic acid, each...	sufficient

Add the horseradish to 4 fluidounces of diluted acetic acid, macerate for 2 days, express, and add enough of the acid to the expressed marc so that the liquid obtained by again expressing latter, added to the previous liquid, will make 4 fluidounces, express again, mix the two liquids and filter.

Infuse the boneset and snakeroot with the water in the usual way so as to obtain 4 fluidounces of product.

Mix the two liquids and in this mixture dissolve the sugar by agitation or percolation.—Eclectic.

Syrup of Hydriodic Acid.

Diluted hydriodic acid.....	av.oz. 1
Water	av.oz. 3
Simple syrup	av.oz. 6

—U. S. P.

This is described as a syrupy liquid containing about 1 per cent. by weight

of absolute hydriodic acid, or about 1.19 gm. in 100 cc. (about 5½ gr. in 1 fl.oz.).

If the simple syrup for this preparation be made with white rock candy instead of ordinary sugar, the product will present a handsomer appearance and will keep much better. Distilled water only should be used in making this preparation.

In the Brit. Form. as in the U. S. P. 1890 this preparation is made directly from potassium iodid and tartaric acid.

Syrup of Hypophosphites.

I.

Calcium hypophosphite.....	av.oz. 1½
Potassium hypophosphite....	av.oz. ½
Sodium hypophosphite.....	av.oz. ½
Diluted hypophosphorous acid, 10 p. c.....	gr. 30
Tincture of fresh lemon peel..	m. 80
Sugar	av.oz. 22
Water, to make.....	fl.oz. 32

Triturate the hypophosphites with 15 fluidounces of water until they are dissolved, add the tincture and the acid, filter, in the filtrate dissolve the sugar by agitation without heat, add enough water to make 32 fluidounces, and strain if necessary.—U. S. P.

The sugar may be dissolved in the liquid by percolation as described under simple syrup. See Syrup, Simple.

It would be preferable to triturate the hypophosphites with a portion of the water, then to triturate with the acid and the remainder of the water.

This is a substitute for the former Churchill's Syrup, which, however, contained only calcium and sodium hypophosphites.

II. Parrish's formula:

Calcium hypophosphite.....	gr. 288
Sodium hypophosphite.....	gr. 96
Potassium hypophosphite....	gr. 96
Sugar	av.oz. 12½
Distilled water, hot.....	fl.oz. 9
Orange flower water.....	fl.dr. 4

Make a solution of the hypophosphites in the hot water, filter, dissolve the sugar in the filtrate, strain, and to the colature add the orange flower water.

Syrup of Hypophosphite of Calcium. (Syrup of Hypophosphite of Lime.)

- I.
 Calcium hypophosphite.....gr. 256
 Hypophosphorous acid, 30 p.c.m. 12
 Sugarav.oz. 12½
 Water, to make.....fl.oz. 16

Dissolve the calcium hypophosphite with the acid in 8 fluidounces of water, filter the solution, add the sugar to the filtrate, and pass enough water through the filter to make the product, after the sugar has been dissolved by agitation, measure 16 fluidounces.

Each fluidram contains 2 gr. of calcium hypophosphite.—N. F.

II.

- Calcium hypophosphite.....gr. 133
 Hypophosphorous acid, 30 p.c.m. 16
 (or 48 m. of 10 p. c. acid)
 Sugarav.oz. 13½
 Distilled water, to make...fl.oz. 16

Dissolve the calcium salt in 7½ fluidounces of distilled water, filter, in the filtrate dissolve the sugar by the aid of a little heat, and after cooling add the acid and the remainder of the water.—Brit. Form.

Syrup of Hypophosphites of Calcium and Iron.

- Solution of iron hypophosphitefl.oz. 1
 Syrup of hypophosphite of calciumfl.oz. 15

Syrup of Hypophosphite of Calcium, Manganese and Potassium.

- Calcium hypophosphite.....gr. 256
 Manganese hypophosphite...gr. 128
 Potassium hypophosphite...gr. 128
 Distilled water, boiling...fl.oz. 3½
 Simple syrup, to make....fl.oz. 16

Triturate the hypophosphites with the water, filter, and add the syrup.—Brit. Form. (1st edition).

This is a poor formula. It should be improved by dissolving the salts in 9 fluidounces of water, filtering, dissolving 13 av.ounces of sugar in the filtrate, straining, and adding simple syrup to make 16 fluidounces.

Syrup of Hypophosphites of Calcium and Sodium. (Syrup of Hypophosphite of Lime and Soda.)

- Calcium hypophosphite.....gr. 256
 Sodium hypophosphite.....gr. 256

- Hypophosphorous acid, 30 p.c.m. 12
 Sugarav.oz. 12½
 Water, to make.....fl.oz. 16

Dissolve the two hypophosphites with the acid in 8 fluidounces of water, filter the solution, add the sugar to the filtrate, and pass enough water through the filter to make the product, after the sugar has been dissolved by agitation, measure 16 fluidounces.

Each fluidram contains 2 gr. each of calcium and sodium hypophosphites.—N. F.

Syrup of Hypophosphites, Compound. (Compound Hypophosphites.)

I.

- Calcium hypophosphite.....gr. 256
 Potassium hypophosphite...gr. 128
 Sodium hypophosphite.....gr. 128
 Iron (ferric) hypophosphite.gr. 16
 Manganese hypophosphite...gr. 16
 Sodium citrategr. 27
 Quinine (alkaloid)gr. 8
 Strychnine (alkaloid)gr. ⅞
 Diluted hypophosphorous acid, 10 p. c.....fl.dr. 2
 Sugarav.oz. 13
 Water, to make.....fl.oz. 16

Rub the iron and manganese salts with the sodium citrate, add 4 fluidrams of water, and warm the mixture for a few minutes, until a clear, greenish solution is obtained. Dissolve the calcium, sodium and potassium hypophosphites in 7½ fluidounces of water to which 40 minims of diluted hypophosphorous acid have been added; then dissolve the quinine and strychnine in 4 fluidrams of water with the aid of 80 minims of diluted hypophosphorous acid. Now mix all these solutions, add the sugar, dissolve it by frequent agitation, strain the syrup and add enough water through the strainer to make the liquid measure 16 fluidounces.—U. S. P.

Although not specified, distilled water only should be used in making this preparation.

This preparation may also be made with solution of ferrous hypophosphite (see Solution of Iron Hypophosphite) instead of ferric hypophosphite if the ferrous salt is preferred.

This syrup is very similar to that of

the former N. F., but differs in having the alkaloids in the form of hypophosphites.

Each fluidram contains 2 grains of calcium hypophosphite, 1 gr. each of potassium and sodium hypophosphites, $\frac{1}{8}$ gr. each of iron and manganese hypophosphites, about $\frac{1}{16}$ gr. of quinine hypophosphite and about $\frac{1}{144}$ gr. of strychnine hypophosphite.

This preparation is frequently made by manufacturers so as to contain in a pint only about 16 grains of calcium hypophosphite, 24 grains of potassium hypophosphite, and no sodium hypophosphite.

II. This preparation has all the metals and alkaloids in combination as hypophosphites and the iron in the ferrous form:

Calcium hypophosphite.....gr.	297
Sodium hypophosphite.....gr.	128
Potassium hypophosphite...gr.	128
Manganese hypophosphite...gr.	16
Quinine (alkaloid)gr.	16
Strychnine (alkaloid).....gr.	1
Hypophosphorous acid, 50	
per cent.f.dr.	2
Iron sulfate, pure, clear crystals	gr. 60
Phosphoric acid, U. S. P., or	
85 per cent.....m.	15
Simple syrup	sufficient
Sugar	av.oz. 12
Distilled water, to make.....f.oz.	16

Dissolve the manganese, potassium and sodium hypophosphites and 256 grains of calcium hypophosphite in $6\frac{1}{2}$ fluidounces of distilled water. Dissolve the two alkaloids in $\frac{1}{2}$ fluidounce of distilled water and the hypophosphorous acid, mix the two solutions, filter, and add water through the filter, if necessary, to make 7 fluidounces of filtrate. In this dissolve the sugar by agitation, and strain. Dissolve the iron salt in 4 fluidrams of distilled water, add the phosphoric acid, triturate 41 grains of calcium hypophosphite to fine powder, add the iron solution, triturate for several minutes, filter, add distilled water through the filter to make 4 fluidrams of filtrate, and with the latter mix enough simple syrup so that when added to the

previous solution the whole shall measure 16 fluidounces.

This contains iron in the ferrous condition. It is a "clear" preparation.

III. Brit. Form.:

Strychnine (alkaloid)	gr. 4/5
Hypophosphorous acid, 30	
per cent	m. 96
Or 10 p. c. acid.....m.	288
Calcium hypophosphite.....gr.	64
Manganese hypophosphite...gr.	32
Potassium hypophosphite...gr.	32
Quinine hypophosphite.....gr.	16
Solution iron hypophosphite,	
No. IV	f.dr. 6½
Chloroform	m. 16
Alcohol	m. 32
Sugar	av.oz. 11¾
Distilled water, to make.....f.oz.	16

Dissolve the strychnine in the acid, dissolve the four hypophosphites in $6\frac{1}{4}$ fluidounces of distilled water, add this to the strychnine solution, then add the ferric hypophosphite solution and the sugar; dissolve the sugar by agitation without heat, add the chloroform dissolved in the alcohol, and finally add the remainder of the water.

Each teaspoonful contains $\frac{1}{160}$ gr. of strychnine and $\frac{1}{8}$ gr. of quinine hypophosphite.

IV. This makes a "cloudy" preparation:

Calcium hypophosphite.....gr.	180
Sodium hypophosphite.....gr.	60
Potassium hypophosphite...gr.	30
Iron phosphate, soluble.....gr.	15
Manganese hypophosphite...gr.	15
Quinine sulfate	gr. 5
Strychnine sulfate	gr. 1
Distilled water	f.oz. 4
Simple syrup, to make.....f.oz.	16

Heat the solids with the water until dissolved, add the syrup in a boiling condition, boil for a minute, stirring constantly, and strain.

V. The following is for those who desire a thick preparation with glucose:

Calcium hypophosphite.....gr.	64
Potassium hypophosphite...gr.	24
Iron sulfate	gr. 24
Manganese sulfate	gr. 16
Quinine sulfate	gr. 7
Strychnine sulfate	gr. 1
Glucose, syrupy	av.oz. 8
Simple syrup	f.oz. 8
Water, to make.....f.oz.	16

Dissolve the calcium and potassium hypophosphites in 2 fluidounces of water. Add to 1 fluidounce of the water 3 fluidrams of the syrup and dissolve in the mixture, by the aid of heat, and remainder of the salts. Mix the solutions, set aside for a few hours, filter into a bottle containing the remainder of the syrup, wash the filter with 1 fluidounce of boiling water, to the liquid add the glucose and then enough water to make 16 fluidounces.

VI. The following is slightly modified from the Ergaenzungs Taxe of Baden, 1898:

Calcium hypophosphite.....gr.	256
Sodium hypophosphite.....gr.	96
Potassium hypophosphite...gr.	96
Manganese hypophosphite...gr.	16
Ferrous lactate	gr. 40
Quinine (alkaloid)	gr. 8
Strychnine (alkaloid)	gr. 1/8
Citric acid	gr. 80
Sugar	av.oz. 10
Distilled water, to make....	fl.oz. 16

Dissolve the acid and alkaloids in a small amount of the water, using a little heat if necessary. Dissolve the salts without heat in the remainder of the water, mix the solutions, add the sugar, dissolve by agitation, and filter.

Syrup of Hypophosphite of Iron.

I.

Iron (ferric) hypophosphite..gr.	128
Potassium citrate	gr. 180
Orange flower water.....	fl.oz. 1
Simple syrup, to make.....	fl.oz. 16

Dissolve the iron hypophosphite with the aid of the potassium citrate in the orange flower water, and add the syrup.

Each fluidram contains 1 gr. of hypophosphite of iron (ferric).—N. F.

II. In this formula advantage is taken of the solvent action of citrates upon ferric hypophosphite:

Calcium hypophosphite...av.oz.	3/4
Sodium hypophosphite....av.oz.	3/4
Potassium hypophosphite..av.oz.	1/4
Iron hypophosphite.....gr.	96
Potassium citrate	gr. 100
Citric acid	gr. 10
Sugar	av.oz. 12
Distilled water, to make....	fl.oz. 16

Mix the hypophosphites of calcium, sodium and potassium and triturate with

6 fluidounces of water, adding the citric acid to effect complete solution of the calcium salt, and filter. To the filtrate, introduced into a bottle, add the sugar. Dissolve the iron, salt and the citrate in 1½ fluidounces of water with the aid of heat, filter the resulting green solution and allow to cool. The perfectly cold solution is added to the contents of the bottle and the sugar is dissolved by agitation.

If it be desired, spirit of lemon may be added to flavor. The iron solution must be perfectly cold or calcium citrate is precipitated and the syrup rendered cloudy.

Freshly precipitated iron hypophosphite requires less potassium citrate for solution than the dry salt.

III.

Solution of iron hypophosphite, No. IV.....	volume 1
Simple syrup	volumes 4
—Brit. Form.	

Syrup of Hypophosphites with Iron.

Ferrous lactate	gr. 72
Potassium citrate	gr. 72
Syrup of hypophosphites, to make	fl.oz. 16

Rub the two salts with a small quantity of the syrup, gradually added, until they are dissolved. Then strain, and add the remainder of the syrup.—U. S. P. 1890.

This preparation should be freshly made when wanted.

The ferrous lactate for this preparation should be crystals or crystalline crusts, not in powder form.

Syrup of Hypophosphites of Iron and Calcium.

See Syrup of Hypophosphites of Calcium and Iron.

Syrup of Hypophosphite of Manganese.

Manganese sulfate	gr. 120
Calcium hypophosphite.....	gr. 80
Sugar	av.oz. 13
Orange flower water.....	fl.dr. 2
Water	sufficient

Dissolve the hypophosphite and sulfate in separate portions of water, mix the two solutions, filter, washing the

precipitate in the filter with fresh distilled water; evaporate the filtrate to 8 fluidounces, dissolve the sugar in the latter, strain, and add the orange flower water.

Each fluidounce contains about 3 gr. of manganese hypophosphite.

Syrup of Hypophosphites of Manganese, Calcium and Potassium.

See Syrup of Hypophosphites of Calcium, Manganese and Potassium.

Syrup of Hypophosphite of Sodium.

I.

Sodium hypophosphite.....gr.	256
Hypophosphorous acid, 30 p.c.gr.	15
Sugar	av.oz. 13
Water, to make.....fl.oz.	16

Dissolve the sodium hypophosphite and the citric acid in 8 fluidounces of water, and filter the solution. In this dissolve the sugar by agitation, and pass the remainder of the water through the filter.

Each fluidram contains 2 gr. of sodium hypophosphite.—N. F.

II.

Sodium hypophosphite.....gr.	128
Distilled water	fl.dr. 4
Simple syrup, to make....fl.oz.	16

Dissolve the sodium salt in 3 fluidrams of water, filter, wash the filter with 1 fluidram of water, and to the filtrate add the simple syrup.—Brit. Form.

Syrup of Hypophosphites of Sodium and Calcium.

See Syrup of Hypophosphites of Calcium and Sodium.

Syrup of Iodophenol. (Syrup Iodo-Phenique.)

This is the formula of Declat as given in L'Officine:

Iodin	gr. 2½
Potassium iodid	gr. 11
Carbolic acid, pure.....gr.	320
Simple syrup, to make....fl.oz.	16

Syrup, Iodotannated. (Syrup of Iodotannin.)

I. Guilliermond's formula:

Iodin	gr. 18
Extract of rhatany.....gr.	72
Sugar	av.oz. 13½
Water, alcohol, each.....	sufficient

Dissolve the iodine in a small quantity

of alcohol, and the extract in some water. Mix the two solutions, allow the reaction to proceed for several days, filter, wash the precipitate on the filter, evaporate the filtrate on a water bath to 8 fluidounces, and in the latter dissolve the sugar by agitation.

II. Gay's formula:

Iodin	gr. 9
Alcohol	fl.dr. 2
Tannin	gr. 9
Simple syrup	fl.oz. 16

Dissolve the iodine in the alcohol, mix with the tannin, and then with the syrup. Now heat to boiling and filter when it no longer reacts with starch.

Syrup of Ipecac.

I.

Fluid extract of ipecac.....fl.dr.	9
Acetic acid, 36 p. c.....m.	80
Glycerin	fl.dr. 13
Sugar	av.oz. 11¾
Water, to make.....fl.oz.	16

Dilute the fluid extract with 5 fluidounces of water which has previously been mixed with the acid, shake the whole thoroughly and set aside in a cool place for 24 hours. Filter, and then pass enough water through the filter to make the filtrate measure 7½ fluidounces. To this liquid add the glycerin and the sugar, dissolve the latter by agitation, and add enough water to make the liquid measure 16 fluidounces. Strain if necessary.—U. S. P.

The sugar may be dissolved in the liquid by percolation as described under simple syrup. See Syrup, Simple.

A weaker acetic acid may be employed if more of it be used and correspondingly less water. Some may object to the acetic acid on account of its odor and taste; this ingredient may be omitted if desired. A common method of making this syrup is to mix the fluid extract with simple syrup, but owing to the resinous character of the former, a precipitate will soon be deposited.

II.

Ipecac, cut fine.....gr.	90
Alcohol	fl.dr. 9½
Water	fl.oz. 8
Sugar	av.oz. 12

Mix the drug, alcohol and water, macerate for 2 days, agitating frequently, filter, and in 8 av.ounces of filtrate, dissolve the sugar.—Germ. Pharm.

III. See also Syrup of Ipecac, Acetic.

Syrup of Ipecac, Acetic.

Vinegar of ipecac.....f.oz. 7½
Sugarav.oz. 13½

Dissolve the sugar in the vinegar by the aid of a gentle heat.—Brit. Form.

Syrup of Ipecac and Opium. (Syrup of Dover's Powder—Dover's Syrup—Opiated Syrup of Ipecac.)

Tincture of ipecac and
opiumf.dr. 11
Spirit of cinnamon.....m. 30
Cinnamon waterf.dr. 4
Simple syrup, to make....f.oz. 16

Each fluidram represents 5 gr. of Dover's Powder or ½ gr. each of ipecac and opium.—N. F.

Syrup of Irish Moss, Compound. (Compound Syrup of Chondrus.)

Irish mossgr. 8
Fluid extract of ipecac.....m. 8
Fluid extract of squill....f.dr. 2
Fluid extract of senega....f.dr. 2
Paregoricf.dr. 3½
Purified talcumgr. 120
Sugarav.oz. 11
Water, to make.....f.oz. 16

Macerate the Irish moss in 1 fluid-ounce of water until it is softened, then heat it on a boiling water bath for 15 minutes, strain it through flannel, without pressure, and wash the flannel and contents with 1 fluidounce of hot water. Mix the fluid extracts and tincture with the talcum and 5 fluidounces of water, shake the mixture frequently and thoroughly during ½ hour, and then filter it through a wetted filter, returning the first portions of the filtrate until it runs through clear. Mix the mucilage of Irish moss with the filtrate, then add the sugar, and pass enough water through the filter to make the product, after the sugar has been dissolved by agitation, measure 16 fluidounces.—N. F.

Syrup of Iron Albuminate.

Ferric chlorid, dry.....gr. 72
White of egg, fresh.....f.oz. 6
Sugarav.oz. 12
Distilled water, to make....f.oz. 16

Dissolve the chlorid in 1 fluidounce of water, add this to the egg-white previously mixed with 3½ fluidounces of water, and let stand for 12 hours. Then percolate through the sugar contained in a funnel or percolator, and then pass enough water through the sugar to make a total percolate of 16 fluidounces.—Cinc. Acad. Pharm.

Each fluidounce is about equivalent to 40 drops of tincture of chlorid of iron, U. S. P.

The next preparation is also known as syrup of iron albuminate.

A syrup of iron albuminate may also be prepared like elixir of iron albuminate by increasing the amount of sugar, or like solution of iron albuminate by decreasing the amount of water and adding sugar. It may also be prepared from the commercial iron albuminate, powder or scale, by solution in water, flavoring, and adding sugar.

Syrup of Iron and Sodium Albuminate.

Prescott's formula:

White of egg, fresh.....No. 4
Sugarav.oz. 2
Tincture of chlorid of iron...f.oz. 2
Solution of soda, U. S. P. or
5 per cent., water, each..sufficient

Mix the white of egg with the sugar and add enough water to effect complete solution; add the tincture of iron, and then just enough of the solution of soda to dissolve the coagulated albumen; finally make up to 16 fluidounces with water.

Syrup of Iron and Ammonium Phosphate.

Ferrous sulfate, pure, clear
crystalsgr. 635
Sodium phosphategr. 820
Glacial phosphoric acid, C. P..gr. 900
Ammonia watersufficient
Sugarav.oz. 12½
Distilled watersufficient

Dissolve the sodium phosphate and the iron sulfate separately in distilled water, mix the solution, and wash the resulting precipitated iron phosphate. Then to one-half of the phosphoric acid, dissolved in 2¼ fluidounces of water, add ammonia water until exactly neutral.

To the remainder of the phosphoric acid, dissolved in a like amount of water, add the moist iron phosphate and dissolve by the aid of a gentle heat; then add the solution of ammonium phosphate and the sugar, dissolve the whole, strain, and evaporate to 16 fluidounces.

Each fluidram contains $4\frac{1}{2}$ gr. ferrous phosphate, $4\frac{3}{4}$ gr. ammonium phosphate, and $3\frac{1}{2}$ gr. of phosphoric acid. The ferrous phosphate is held permanently in solution.

Syrup of Iron Arsenate.

Sodium arsenate, dried to a constant weight at a heat not exceeding 149 deg. C....gr.	3
Iron citrate	3
Water	4
Simple syrup, to make.....fl.oz.	16

Dissolve the sodium arsenate and iron citrate in the water, contained in a test-tube, by the aid of heat. Then mix the solution with the syrup.

Each fluidram contains about $1/60$ gr. of arsenate of iron (ferric).

Care should be taken to select perfectly formed crystals of sodium arsenate, which must then be dried completely at 100 deg. C. (212 deg. F.), and the quantity required for the above formula must be weighed from the dried salt. It is advisable to dry a fresh quantity of the salt each time the above syrup is to be prepared.—N. F.

The iron citrate to be used is the scale salt not containing ammonia, not the citrate of iron and ammonium or so-called soluble citrate of iron.

Syrup of Iron Bromid.

I.

Iron, in the form of fine wire, and cut into small pieces...gr.	350
Bromin	2
Sugar, coarse powder.....av.oz.	16
Distilled water, to make...av.oz.	$26\frac{1}{2}$

Introduce the iron into a flask of thin glass of suitable capacity, add to it 5 fluidounces of distilled water and afterwards the bromin. Shake the mixture occasionally, until the reaction ceases and the solution has acquired a green

color and has lost the odor of bromin. Place the sugar in a porcelain capsule and filter the solution of iron bromid into the sugar. Rinse the flask and iron wire with $2\frac{1}{2}$ fluidounces of distilled water and pass the washings through the filter into the sugar. Stir the mixture with a porcelain or wooden spatula, heat it to the boiling point on a sand bath, and, having strained the syrup through linen into a tared bottle, add enough distilled water to make the product weigh $26\frac{1}{2}$ av.ounces. Lastly, shake the bottle and transfer its contents to small vials, which should be completely filled, securely corked, and kept in a place accessible to daylight.—N. F. Appendix and U. S. P. 1880.

The quantities given above are arranged so that two original 1-ounce bottles of bromin may be used. The bottles may be opened under the water used for making the syrup. If less syrup is required, one-half the quantity may be made, using but one 1-ounce bottle of bromin.

A convenient form of iron for making the above is what is known as "card teeth."

The quantities given in the above formula make about 20 fluidounces of syrup.

The product is described as a syrupy liquid containing 10 per cent. of ferrous bromid.

II.

Iron wire, free from rust....gr.	219
Bromin	533
Sugar	14
Distilled water, to make...fl.oz.	20

Mix the iron with 4 fluidounces of distilled water into a glass flask, having a capacity of at least 20 fluidounces, and surround it with cold water; add the bromin gradually in small amounts, and shake occasionally until the froth is white and reaction is complete. Dissolve the sugar in 6 fluidounces of distilled water by the aid of the heat of the water bath, filter the iron bromid solution into this warm syrup, and add if neces-

sary enough distilled water to make 20 fluidounces.—Brit. Form.

The product contains about 6 p. c. of ferrous bromid, or about $4\frac{1}{2}$ gr. in one teaspoonful.

Syrup of Iron Bromid with Quinine.

Quinine acid hydrobromid...gr. 128
Diluted hydrobromic acid...m. 145
Distilled waterfl.dr. $10\frac{1}{2}$
Syrup of iron bromid, to
makefl.oz. 16

Dissolve the quinine salt in the mixed acid and water and then add the syrup.—Brit. Form.

Syrup of Iron Bromid with Quinine and Strychnine.

This is like the preceding, but containing in addition 2 grains of strychnine alkaloid which is to be dissolved with the quinine salt in the mixed acid and water.—Brit. Form.

Syrup of Iron (Ferric) Chlorid.

I.

Ferric chlorid, dry.....gr. 75
Sugarav.oz. $4\frac{1}{4}$
Distilled water, to make....fl.oz. 16
Mix, dissolve, and strain.

Each fluidounce represents about 50 drops of tincture of chlorid of iron, U. S. P.

This preparation has the properties of the tincture without its excessive acidity.—Cinc. Acad. Pharm.

II. The following is a non-astringent preparation of a pale green color:

Solution of iron chlorid, U.
S. P.fl.dr. 4
Distilled waterfl.oz. 1
Sodium citrategr. 400
Sugarav.oz. 2
Simple syrup, to make....fl.oz. 16

Dissolve the citrate in the water, add the iron solution, dissolve the sugar in the liquid, strain, and to the colature add the simple syrup.

This is one-eighth the strength of the tincture of iron chlorid and corresponds in strength to many commercial syrups of iron chlorid.

III. The following furnishes a non-astringent preparation of a brownish color in which the acid of the tincture

of iron chlorid is neutralized up to the point of safety:

Tincture of iron chlorid, U.

S. P.m. 640
Sodium bicarbonategr. 130
Glycerinfl.oz. 1
Simple syrupfl.oz. 6
Distilled water, to make...fl.oz. 16

Mix the tincture with 4 fluidounces of the water, add the bicarbonate and triturate. When effervescence has ceased, add the glycerin, syrup and remainder of water, let stand 24 hours, and filter.

Syrup of Iron (Ferrous) Chlorid. (Syrup of Iron Protochlorid.)

Solution of iron protochloridfl.dr. $6\frac{1}{2}$
Glycerinfl.oz. 2
Orange flower water.....fl.oz. 2
Simple syrup, to make.....fl.oz. 16

Mix the solution with the glycerin and orange flower water, and add enough syrup to make 16 fluidounces.

Each fluidram contains about 1 gr. of iron protochlorid (ferrous chlorid).—N. F.

Syrup of Iron Hypophosphite.

See Syrup of Hypophosphite of Iron.

Syrup of Iron (Ferrous) Iodid.

I.

Iron, in the form of fine,
bright wire, and cut into
small piecesgr. 123
Iodingr. 408
Diluted hypophosphorous
acid, 10 p. c.....fl.dr. $3\frac{1}{2}$
Sugarav.oz. $13\frac{1}{2}$
Distilled water, to make..av.oz. $22\frac{1}{2}$

Put the iron in a flask of thin glass, having a capacity of about 8 fluidounces, add to it $2\frac{1}{2}$ fluidounces of distilled water, and afterwards the iodine. Shake the mixture occasionally, checking the reaction if necessary by allowing cold water to flow over the flask, and when the mixture has acquired a green color and has lost the odor of iodine, heat it to boiling and add at once 500 grains of sugar; when this has dissolved, filter the solution into the remainder of the sugar contained in a porcelain dish. Rinse the flask and iron wire with 3 fluidounces of water and pass the washings through the filter into the sugar.

Stir the mixture with a porcelain or wooden spatula, heating the liquid on a water bath until complete solution is effected, and, having passed the syrup through a clean muslin strainer into a tared bottle, add the hypophosphorous acid, and then enough distilled water to make the product weigh $22\frac{1}{2}$ av.ounces (which will measure about 16 fluid-ounces).

This is described as a syrupy liquid containing about 5 per cent. of ferrous iodid or about 6.74 gm. in 100 cc. (about 31 grains in 1 fluidounce). In the U. S. P. 1890 this preparation contained 10 per cent. of ferrous iodid.—U. S. P.

Hypophosphorous acid is added to the syrup to preserve it. Many other substances have been recommended, such as a small amount of citric acid, or replacing 2 av.ounces of the sugar with an equal amount of solid grape sugar.

II.

Iron, in wire.....gr. 182
Iodingr. 605
Sugarav.oz. $13\frac{3}{4}$
Distilled water, to make...fl.oz. 16

Heat the sugar with 5 fluidounces of boiling distilled water until dissolved. Dilute 4 fluidrams of this syrup with an equal volume of distilled water, and set this aside. Digest the iodine and iron in a flask with 2 fluidounces of distilled water, heat gently, and finally boil slightly until the froth loses its yellow color. Filter the liquid while still hot into the syrup, washing the flask and the filter with the diluted syrup previously set aside and now heated to boiling. Pass enough boiling distilled water through the filter to produce, when cold, 16 fluid-ounces.—Brit. Pharm.

This is stronger than the U. S. P. preparation, containing about $6\frac{1}{2}$ per cent. of ferrous iodid, about 11 minims containing 1 gr. of the salt.

III.

Iodingr. 420
Iron, powdergr. 140
Simple syrupav.oz. 19
Distilled water, to make...av.oz. $22\frac{1}{2}$
Mix the iodine in a glass flask with 9

fluidrams of the water and add the iron gradually, in small quantities, with constant agitation and frequent cooling off, until a greenish liquid is obtained. Filter this through a small filter into the syrup, and through the filter add the remainder of the water.

This contains about 5 per cent. of ferrous iodid.—Germ. Pharm.

IV. This preparation may also be prepared from the N. F. solution of iron iodid by mixing 1 volume of the latter with 11 volumes of simple syrup.

Syrup of Iron Iodid, Tasteless. (Syrup of Citro-Iodid of Iron.)

Iodinav.oz. 1
Iron wire, fine, bright, and
finely cutgr. 200
Potassium citrategr. 600
Sugarav.oz. 11
Distilled water, to make...av.oz. $17\frac{1}{2}$

Mix the iron with $2\frac{1}{2}$ fluidounces of distilled water in a flask, add 330 grains of the iodine, apply a gentle heat and set aside until the iodine is combined and the solution has acquired a green color. Then heat the contents of the flask to boiling, filter the liquid, and wash the filter with 4 fluidrams of warm distilled water. Add to the filtrate the remaining 100 grains of iodine, and, as soon as solution has been effected, mix with the potassium citrate previously dissolved in $1\frac{1}{2}$ fluidounces of distilled water, and agitate the liquid until it has assumed a green color. Pour this upon the sugar contained in a bottle, agitate until solution has been effected, and when the liquid is cold, add enough distilled water to make 16 fluidounces.

Each fluidram contains an amount of iron, corresponding to about 3.6 gr. of ferric iodid, and therefore differs from U. S. P. syrup of iron iodid, which contains ferrous iodid.—N. F.

Syrup of Iron Lactophosphate.

Ferrous lactategr. 128
Phosphoric acid (85 p. c., U.
S. P.)sufficient
Waterfl.dr. 4
Simple syrup, to make....fl.oz. 16

Dissolve the iron lactate in the water with the aid of a sufficient quantity of

phosphoric acid, avoiding an excess, and add enough syrup to make 16 fluid-ounces.

Each fluidram contains 1 gr. of iron lactate, or about $1\frac{1}{2}$ gr. of so-called "lactophosphate of iron."—N. F.

Syrup of Iron and Manganese Iodid.

Iodin	gr. 595
Iron wire, fine, bright, and finely cut	gr. 200
Manganese sulfate	gr. 192
Potassium iodid	gr. 230
Distilled water, to make...	fl.oz. 16
Sugar	av.oz. 13

Mix the iron with 4 fluidounces of distilled water in a flask, add the iodine, and prepare a solution of ferrous iodid (see Syrup of Iron Iodid) in the usual manner, aiding the process, if necessary, by heating the contents of the flask, at first gently, and finally to boiling. Filter the liquid, through a small filter, directly upon the sugar, contained in a suitable bottle. Dissolve the manganese sulfate in 2 fluidounces of distilled water, and the potassium iodid in $1\frac{1}{2}$ fluidounces of diluted alcohol, mix the two solutions, and filter into the same bottle which contains the sugar and the iron solution. Wash the filter with 4 fluidrams of cold distilled water, receiving the washings in the same bottle. Agitate until the sugar is dissolved, and, if necessary, strain. Finally, make up the volume with distilled water to 16 fluidounces.

Each fluidram contains about 6 gr. of iron (ferrous) iodid and 3 gr. of manganese iodid.—N. F.

Syrup of Iron (Soluble) Oxid. (Syrup of Soluble Saccharated Iron—Syrupus Ferri Oxydati Solubilis—Syrup of Saccharated Oxid of Iron.)

Solution of iron chlorid...	av.oz. $2\frac{1}{4}$
(about fl.dr. $12\frac{1}{2}$)	
Caustic soda, pure.....	gr. 300
Sugar	av.oz. $6\frac{1}{4}$
Distilled water, solution of soda, simple syrup, each...	
.....sufficient to make av.oz.	22

Dissolve the caustic soda in $4\frac{1}{2}$ fluidounces of water; add this solution to the solution of iron chlorid previously mixed with 9 fluidrams of syrup, and set the

mixture aside, during 24 hours, in a dark place. Then pour the clear liquid slowly into 34 fluidounces of boiling distilled water, continue the boiling for a few minutes, and then set the mixture aside during one day, in a dark place, so that it may become clear by settling. Withdraw the supernatant liquid by means of a siphon, then wash the residue again with 34 fluidounces of boiling distilled water, by decantation. Transfer the magma to a wetted strainer, and wash it with hot distilled water, until this runs off colorless, but so that the mass on the strainer still retains a moderately strong alkaline reaction. Then allow the excess of liquid to drain off, transfer the moist magma to a tared porcelain capsule, add the sugar, and heat it on a water bath, with exclusion of daylight, during 2 hours, replacing from time to time any water lost by evaporation, and adding, if necessary, solution of soda, drop by drop, until the magma is entirely dissolved. Lastly, add enough simple syrup to make the product weigh 22 av.ounces, and transfer the product to bottles, which should be completely filled, and stored in a cool and dark place.

The caustic soda for this preparation should be pure and contain at least 90 per cent. of absolute soda; if weaker, proportionately more of it must be used.

100 grains, or about 75 minims, of this syrup represent approximately 1 gr. of metallic iron.

The above process is based upon that of the Germ. Pharm. (1st edition). The formula given by the later editions of this work presupposes the keeping in stock of a dry saccharated oxid of iron (see Iron Oxid, Soluble or Saccharated) representing 3 per cent. of metallic iron. When this is available, the syrup may also be prepared by the following formula:

Saccharated or soluble oxid
of iron,
Simple syrup,
Water, each...equal parts by weight
Dissolve the oxid in the mixed liquids,

using a gentle heat if necessary.—N. F.

Syrup of Iron (Ferrous) Phosphate.

Iron, in wire.....gr. 63
Phosphoric acid, U. S. P. or
85 per cent.....fl.dr. 6½
Or 50 p. c. phosphoric acid.fl.dr. 10½
Simple syrup.....fl.oz. 11¼
Distilled water, to make....fl.oz. 16

Mix the iron with the 85 p. c. acid previously diluted with 10 fluidrams of the water (or the 50 p. c. acid diluted with 6 fluidrams of water) in a small glass flask, close the neck of the latter with cotton, and heat gently until the iron is dissolved. When cold, filter into the syrup and pass the remainder of the water through the filter.

Each fluidram contains 1 gr. of anhydrous ferrous phosphate. — Brit. Pharm.

A convenient form of iron to use for the above is what is known as "card teeth."

The above preparation may also be made by a process similar to the one given under Syrup of Iron and Ammonium Phosphate, the ammonia water and half the acid to be omitted from the latter.

Syrup of Iron Phosphate, Compound.

See Syrup of the Phosphates, Compound.

Syrup of Iron Protochlorid.

See Syrup of Iron (Ferrous) Chlorid.

Syrup of Iron Pyrophosphate.

I.

Iron pyrophosphate, scale....gr. 64
Distilled water, warm.....fl.dr. 2
Simple syrup, to make.....fl.oz. 16

Dissolve the iron salt in the water and add the syrup. An alcoholic solution of some aromatic oil may be added to this mixture.—Eclectic.

II.

Iron pyrophosphate, soluble..gr. 90
Distilled water.....fl.dr. 1
Simple syrup, to make.....fl.oz. 16
—Codex.

Syrup of Iron and Quinine Iodids.

I. Bouchardat's formula:

Iodin.....gr. 42
Iron, powder.....gr. 17

Simple syrup.....fl.oz. 15½
Quinine sulfate.....gr. 8
Diluted sulfuric acid.....sufficient
Distilled water.....fl.dr. 4½

Digest the iodine, iron, and 3 fluidrams of the water until the red-brown color of the iodine has disappeared; filter through a small filter into the syrup. Then dissolve the quinine salt in 1½ fluidrams of water with the aid of diluted sulfuric acid and mix this solution with the previously prepared syrup.

II.

Quinine sulfate.....gr. 20
Hypophosphorous acid, 10
per cent.....sufficient
Potassium iodid.....gr. 8
Simple syrup, to make.....fl.oz. 8
Syrup of iron iodid (U. S.
P.).....fl.oz. 8

To the quinine sulfate add about 10 drops of hypophosphorous acid and then a small amount of simple syrup; when the quinine salt is dissolved, add the remainder of the syrup and afterwards the potassium iodid dissolved in a few drops of water. Now add the syrup of iron iodid and mix. Should any cloudiness appear, clear it up by a few drops of the hypophosphorous acid.

A fluidram of this syrup contains about 4 gr. of dry iron iodid and about 6 gr. of quinine hydriodid.

The latter is the best formula, as it is least likely to precipitate.

Syrup of Iron, Quinine and Strychnine Phosphates.

See Syrup of Phosphates of Iron, Quinine and Strychnine.

Syrup of Iron Superphosphate.

Add freshly precipitated iron phosphate (see manner of preparation under Syrup of Iron and Ammonium Phosphate) to saturation to a boiling solution of glacial phosphoric acid. On concentrating and cooling, the product forms a soft mass, which is freely soluble in water in all proportions and is free from inky taste.

The syrup may be prepared by dissolving 5 gr. of this substance in a fluidram of simple syrup.

Syrup of Lactophosphate of Calcium.

See Syrup of Calcium Lactophosphate.

Syrup of Lactucarium.

Tincture of lactucarium.....	f.dr.	13
Glycerin	f.oz.	3¼
Citric acid	gr.	8
Orange flower water.....	f.dr.	7
Simple syrup, to make.....	f.oz.	16

Mix the tincture with the glycerin, also dissolve the acid in the orange flower, mix the two liquids, and filter if necessary. Then add enough simple syrup to make the liquid measure 16 fluidounces.—U. S. P.

Syrup of Lactucarium, Opiated.

Ext. of French lactucarium...	gr.	5
Extract of opium.....	gr.	2½
Citric acid	gr.	2½
Orange flower water.....	f.dr.	2
Sugar	av.oz.	14½
Distilled water	sufficient	

Pour boiling water, about 10 fluidounces, on the lactucarium, add the acid and sugar, dissolve, clarify by adding white of egg and heating to a boil. Strain, add the opium extract, previously dissolved in the orange flower water, and add enough water to make the product weigh 22 av.ounces (measuring about 16 fluidounces).—Codex.

The extract of French lactucarium is prepared as follows:

French lactucarium.....	av.oz.	1
Alcohol, water, each.....	sufficient	

Reduce the lactucarium to powder, mix with 4¼ fluidounces of alcohol and 17 fluidrams of water, macerate for 10 days, agitating occasionally, and strain with expression. Macerate the residue with a mixture of 12 fluidrams of alcohol and 6 of water for 3 days, agitating occasionally, and again strain with expression. Mix the two liquids and evaporate on a water bath to dry extract.

Syrup of Lemon. (Syrupus Limonis or Citri.)

I.

Lemon juice, freshly expressed and strained.....	f.oz.	8½
Lemon peel, fresh.....	av.oz.	2½
Sugar	av.oz.	14
Water, to make.....	f.oz.	16

Heat the lemon juice to boiling, add

the peel, let stand until cold, filter, add enough water through the filter to make the filtrate measure 8½ fluidounces, in the latter dissolve the sugar by agitation without heat, and strain.—U. S. P. 1880.

The peel should be deprived of the inner white, bitter layer, and should be cut into small pieces.

Syrup of citric acid is frequently dispensed for syrup of lemon, but the above is a more agreeable preparation.

II.

Lemon juice	f.oz.	7½
Lemon peel, fresh, in thin slices or grated.....	gr.	135
Alcohol	sufficient	
Sugar	av.oz.	11¾

Macerate the peel in 4 fluidrams of alcohol for 7 days, agitating occasionally, press, filter, adding through the filter enough alcohol to make 5 fluidrams. In the lemon juice, clarified by subsidence, dissolve the sugar with the aid of a gentle heat. When this is cold, mix it with the alcoholic liquid.—Brit. Pharm.

The product should weigh 20 av.ounces (measuring about 16 fluidounces).

Syrup of Licorice. (Syrup of Glycrrhiza—Syrupus Liquiritiæ.)

I.

Pure extract of licorice...	av.oz.	2¼
Glycerin	f.dr.	13
Sugar	av.oz.	11
Water, to make.....	f.oz.	16

Dissolve the extract in 8 fluidounces of water, add the sugar, dissolve it by agitation, and strain. Then add the glycerin, and lastly, enough water to make 16 fluidounces.

Each fluidram represents about 30 gr. of licorice.—N. F.

A better preparation, and one which is more expeditiously obtained, is made by mixing 4 fluidounces of glycerite of licorice with 12 of simple syrup.

Either of the above mixtures is unnecessarily strong and much stronger than usually made. A mixture of 2 fluidounces of glycerite of licorice with 14 of simple syrup will suffice for all purposes.

II.

Licorice root, cut fine.....av.oz.	4
Ammonia water, 10 p. c.....fl.oz.	1
Distilled water	fl.oz. 15½
Alcohol	fl.oz. 2¼
Simple syrup	sufficient

Mix the root, ammonia and water, let stand for 12 hours, agitating occasionally, then express, evaporate the liquid on a water bath to a weight of 2 av.ounces, to this add the alcohol, set aside for 12 hours, filter, and to the filtrate add enough simple syrup to make a total weight of 20 av.ounces.—Germ. Pharm.

Syrup of Licorice, Aromatic. (Compound Syrup of Licorice.)

Hassebrock's formula:

Ceylon cinnamon	gr. 145
Ginger, Cochin	gr. 90
Clove	gr. 60
Nutmeg	gr. 22
Extract of licorice, purified..gr.	365
Sugar	av.oz. 12½
Alcohol, water, simple syrup, each, to make...	fl.oz. 16

Reduce the first four ingredients to No. 40 powder, extract by the usual process of percolation, using alcohol as a menstruum, until 13 fluidrams of percolate are obtained, mix this percolate intimately with 6¼ av.ounces of sugar, and set the mixture aside in a moderately warm place until the alcohol has evaporated. Continue the percolation of the drug with water until 4 fluidounces more of percolate have been obtained, and dissolve the dry, aromatized sugar in this by agitation or percolation. Dissolve the extract of licorice in 4 fluidounces of water, dissolve the remaining 6¼ av.ounces of sugar in this solution by agitation or percolation, mix this syrup with the previously prepared aromatic syrup, and finally add simple syrup enough to make a total of 16 fluidounces.

Syrup of Licorice and Yerba Santa.

Fluid extract of yerba santa	fl.dr. 6½
Pure extract of licorice, U. S. P.	gr. 360
Magnesium carbonate	gr. 150
Sugar	av.oz. 10
Distilled water, to make...	fl.oz. 16

Mix the fluid extract with the magnesium carbonate and 1½ av.ounces of sugar in a mortar. Add gradually 3½ fluidounces of water, filter, and through the filtrate add enough water to make 6½ fluidounces of filtrate. Add the extract of licorice dissolved in 1 fluidounce of water, the remainder of the sugar, heat to boiling, strain and add enough water through the strainer to make 16 fluidounces of colature.—Cinc. Acad. Pharm.

Instead of the extract of licorice, 1½ fluidounces of glycerite may be employed.

Keep the syrup in a cool, dark place. This makes a pleasant and perfect vehicle for quinine.

See also Syrup of Yerba Santa, Aromatic, Nos. III and IV, and Syrup of Yerba Santa and Licorice, Concentrated, and Syrup of Yerba Santa, Licorice and Chocolate, Compound, all of which also contain licorice and yerba santa.

Syrup of Lime. (Syrupus Calcis or Calcaria—Saccharated Solution of Lime.)

I.

Lime (calcium oxid).....gr.	480
Sugar	av.oz. 5½
Water, to make.....	fl.oz. 16

Slake the lime by the addition of 6 fluidrams of water with the aid of heat, then mix it and the sugar thoroughly in a mortar, so as to form a homogeneous powder; then add the mixture to 8 fluidounces of boiling water, contained in a bright copper or tinned-iron vessel, and boil for 5 minutes, constantly stirring. Dilute the liquid with enough water to make it measure 15 fluidounces and filter through white paper, closely covering the funnel during filtration. Then add through the filter enough water to make the product measure 16 fluidounces.—U. S. P.

Keep the syrup in well-stoppered bottles.

The presence of sugar greatly facilitates the solution of lime in water, so much so that the above may be considered a concentrated lime water, be-

ing about 20 times as strong as the latter.

The lime, sugar and water need not be boiled as directed in the official formula; the mixture may be allowed to stand for 2 or 3 days, occasionally agitating, then adding water, filtering, etc., as before.

II. Brit. Pharm. formula for saccharated solution of lime which is the corresponding preparation to the above:

Calcium hydrate (slaked lime)	gr. 365
Sugar	gr. 730
Distilled water	f.oz. 16

Dissolve the sugar in the water and add the lime. Set aside in a stoppered green glass bottle for a few hours, agitating occasionally, then siphon off the clear liquid, avoiding unnecessary exposure to the air.

This contains nearly 2 per cent. of calcium oxid, or about 8 grains to the fluidounce, and is therefore about one-fourth weaker than the U. S. P. preparation, which latter also contains more sugar.

Syrup of Liquidambar.

Sweet-gum bark, coarsely powdered	av.oz. 2½
Sugar	av.oz. 13
Water	sufficient

Moisten the bark thoroughly with water, macerate in a close vessel for 24 hours, pack in a percolator, and pour on water until 8 fluidounces of percolate are obtained. In this dissolve the sugar by agitation or percolation.—Eclectic modified.

This has been recommended for the bowel complaints of children, also for chronic cough and mucous affections.

Syrup of Lobelia.

I.

Vinegar of lobelia.....	f.oz. 8
Sugar	av.oz. 14

Dissolve the sugar in the vinegar by the aid of a gentle heat and strain.—Eclectic formula modified.

II. This is credited to Thomsonian practice:

Lobelia seed or herb.....	pound ¼
Water	gall. 1
Vinegar	pint ½
Sugar	pounds 8
Tincture of lobelia.....	pints 2

Boil the lobelia with the water and vinegar for one-half hour, occasionally replacing the water lost by evaporation, then strain, add the sugar, dissolve, and add the tincture.

Syrup of Maidenhair. (Syrup of Adiantum—Syrupus Capilli Veneris.)

I.

Infusion of maidenhair....	f.oz. 8
Sugar	av.oz. 12½

Dissolve the sugar in the liquid. The infusion is to be made from an amount of fresh drug equal to 365 grains of dry drug. The fresh drug is preferred.—Eclectic.

II.

Maidenhair	gr. 320
Distilled water, hot.....	f.oz. 10
Sugar	av.oz. 11

Macerate the drug in the water for 6 hours, strain, add the sugar, and dissolve.—Codex.

III.

Maidenhair, fresh, cut....	av.oz. 1
Distilled water, hot.....	f.oz. 11½
Sugar	av.oz. 16
Orange flower water.....	m. 45

Heat the maidenhair with the water in a closed vessel on a water bath for an hour, strain, in 10 av.ounces of the colature, dissolve the sugar, strain again, and add the orange flower water.—Austr. Pharm.

Syrup of Manganese Hypophosphate.

See Syrup of Hypophosphite of Manganese.

Syrup of Manganese Iodid.

Procter's process:

Manganese sulfate	gr. 960
Potassium iodid	gr. 1140
Sugar	av.oz. 13
Distilled water, simple syrup, each	sufficient

Dissolve the two salts each in 3 fluidounces of water to which 2 fluidrams of syrup have been added, mix them, place in a cool location for at least one-

half hour, filter, allowing the filtrate to pass into a bottle containing the sugar; add sufficient water through the filter to make the whole measure 16 fluidounces, dissolve the sugar by agitation, and filter if necessary.

Each fluidram contains about $7\frac{1}{2}$ gr. of manganese iodid.

Syrup of Manganese and Iron Iodid.

See Syrup of Iron and Manganese Iodid.

Syrup of Manganese (Saccharated) Oxid. (Syrup of Manganese Saccharate.)

Gerhard's formula:

Potassium permanganate ...gr. 255
Sugarav.oz. $8\frac{1}{2}$
Caustic soda, pure....gr. 12 to 15
Distilled watersufficient

Dissolve the potassium salt in 28 fluidounces of distilled water, and $3\frac{1}{2}$ av.ounces of sugar (or $4\frac{1}{2}$ fluidounces of simple syrup), and set aside for several hours to allow a gelatinous precipitate to form. Now bring the liquid to the boiling point to make the precipitate denser, and separate the latter by filtration. Wash the magna (precipitate of manganese hydrate) with a little distilled water, and press it gently, when the product will be found to weigh somewhat over $4\frac{1}{2}$ av.ounces. Triturate the latter with 5 av.ounces of sugar and add the soda dissolved in $1\frac{1}{2}$ fluidrams of water, and heat until a clear solution is obtained. Finally add enough distilled water to make the product weigh 10 av.ounces (measuring about 8 fluidounces).

The product contains 2 per cent. of manganese.

Syrup of Manganese Phosphate.

Wiegand's formula:

Manganese sulfategr. 940
Sodium phosphate.av.oz. $3\frac{1}{2}$
or sufficient
Hydrochloric acidfl.dr. 5
Sugarav.oz. 13
Water, to make.....fl.oz. 16

Dissolve the salts separately in 10 fluidounces of water, and add solution of sodium phosphate to the solution of

manganese sulfate as long as it produces a precipitate, which wash with cold water, and then dissolve by means of the hydrochloric acid; dilute this solution till it measure $8\frac{1}{2}$ fluidounces, in this dissolve the sugar, adding enough water, if necessary, to make up 16 fluidounces.

Syrup of Manna. (Syrupus Mannæ or Mannatus.)

Manna, bestav.oz. $2\frac{1}{4}$
Sugarav.oz. $13\frac{1}{2}$
Alcoholfl.oz. 1
Water, to make.....fl.oz. 16

Dissolve the manna in 7 fluidounces of hot water, add the alcohol, set the liquid aside for 12 hours in a moderately warm place, and filter. Dissolve the sugar in the filtrate, with the aid of a gentle heat, allow the syrup to cool, and add enough water, passed through the filter previously used, to make 16 fluidounces.—N. F.

The product is approximately of the same strength as that which is official in the Germ. Pharm. The latter contains only about 4 fluidrams of alcohol and somewhat less sugar, about 11 av.ounces.

Syrup of Mercuric Iodid. (Gibert's Syrup.)

Red mercuric iodid.....gr. 3
Potassium iodidgr. 120
Waterfl.dr. 3
Simple syrup, to make....fl.oz. 10

Dissolve the mercuric and potassium iodids in the water and add the syrup.

Syrup of Mitchella, Compound. (Compound Syrup of Partridge Berry—Mother's Cordial—Compound Syrup of Squaw Vine.)

The following is a practical formula for this Eclectic preparation:

Mitchella (squaw vine)....av.oz. 2
Helonias rootav.oz. $\frac{1}{2}$
Cramp barkav.oz. $\frac{1}{2}$
Blue cohoshav.oz. $\frac{1}{2}$
Oil of sassafrasdrops 4
Sugarav.oz. 9
Water, alcohol, each.....sufficient

Mix the drugs, reduce to powder, add the oil, and percolate in the usual manner so as to obtain 11 fluidounces of product, using as a menstruum a mix-

ture of 1 volume of alcohol and 2 of water; in this percolate dissolve the sugar.

Syrup of Morphine Sulfate. (Syrup of Morphine.)

I.

Morphine sulfategr. 4
Water, hotfl.dr. 1
Simple syrup, to make.....fl.oz. 4

Dissolve the morphine sulfate in the hot water, and add enough simple syrup to make 4 fluidounces.

Each fluidram contains $\frac{1}{8}$ gr. of morphine sulfate.

This preparation is in considerable use in the Southern States. It should, however, never be dispensed in prescriptions, unless it is known to be the preparation intended, or unless it is designated as that of the National Formulary (N. F.).

When Syrup of Morphine is prescribed without any such specific designation or knowledge, it is recommended that the corresponding but weaker preparation of the French Pharm. be dispensed. The official title of this is Sirop de Chlorhydrate de Morphine (or Sirop de Morphine).—N. F.

This may be prepared approximately of the strength required by the Codex, as in II.

II.

Morphine hydrochloridgr. $1\frac{1}{4}$
Waterfl.dr. 1
Simple syrup to make.....fl.oz. 4

Dissolve the morphine hydrochlorid in the water, and add the syrup to make 4 fluidounces.

Each fluidram contains about $1/25$ gr. of morphine hydrochlorid.—Codex.

Syrup of Morphine, Compound.

Fluid extract of ipecac.....m. 15
Fluid extract of rhubarb.....fl.dr. 2
Fluid extract of senega....fl.dr. 12
Morphine sulfategr. 4
Oil of sassafras.....m. 8
(about drops 12)

Simple syrup, to make....fl.oz. 16

Dissolve the morphine sulfate in about 1 fluidounce of simple syrup, then add the fluid extracts and the oil, and lastly, enough syrup to make 16 fluid-

ounces. Mix the whole thoroughly by shaking.

In some sections of the country this preparation is dispensed when Pectoral Syrup or Jackson's Cough Syrup is demanded or ordered. As the formula differs too much from that originally used by Dr. Jackson it is recommended that the above preparation be dispensed only when it is designated by the title above given.—N. F.

See Syrup, Pectoral, also Syrup, Pectoral, Compound.

Syrup, Mucilaginous.

See Thomsonian Remedies.

Syrup, Onion.

Such a preparation is used sometimes; it has been in great repute among Thomsonians and others and is still largely employed in domestic practice.

One method of making it is to slice the onions, slightly brown them, express the juice, and add syrup or honey. Another method is to make a decoction with water, strain, and dissolve sugar in the liquid. Still another method is to arrange sliced onions with alternate layers of sugar and allow to stand in a warm place.

Syrup Opiated. (Syrupus Opiatus—Sirop Thebaïque.)

Extract of opium.....gr. 20
Waterfl.dr. 2
Simple syrup, to make.....fl.oz. 16

Dissolve the extract in the water and add the syrup.—Codex.

Syrup of Orange. (Syrup of Orange Peel.)

I.

Tinct. of sweet orange peel.fl.dr. $6\frac{1}{2}$
Citric acidgr. 40
Magnesium carbonategr. 80
Sugarav.oz. $13\frac{3}{4}$
Water, to make.....fl.oz. 16

Triturate the carbonate in a mortar with the tincture, add gradually $6\frac{1}{2}$ fluidounces of water, filter, and add enough water through the filter to make the filtrate measure $7\frac{1}{2}$ fluidounces. In this dissolve the acid and sugar by agitation without heat, and then add

enough water to make the product measure 16 fluidounces.—U. S. P.

This syrup should never be made by mixing the fluid extract of orange peel with simple syrup, as is sometimes done. The product is dark, turbid and bitter, in no way resembling a properly-made syrup.

II.

Tincture of orange, Brit.
Pharm.volume 1
Simple syrupvolumes 7
—Brit. Pharm.

III.

Bitter orange peel, cut fine.av.oz. 1
Sherry winefl.oz. 9
Sugarav.oz. 12

Macerate the orange peel with the wine for 2 days, express, filter; in 8 av.ounces of the filtrate dissolve the sugar.—Germ. Pharm.

Syrup of Orange Flowers.

Sugarav.oz. 14¼
Orange flower water, to
makefl.oz. 16

Dissolve the sugar in 7½ fluidounces of the water by agitation, without heat, and add enough of the water to make 16 fluidounces.—U. S. P.

The sugar may also be dissolved by percolation as described under Syrup, Simple, which see.

The preparation of the Brit. Pharm. is practically the same.

Syrup, Pectoral. (Jackson's Pectoral or Cough Syrup.)

Morphine hydrochlorid.....gr. 4
Oil of sassafras.....m. 4
Syrup of acacia, to make...fl.oz. 16

Dissolve the morphine hydrochlorid in about 1 fluidounce of the syrup, add the oil of sassafras, and enough syrup to make 16 fluidounces

Each fluidram contains 1/32 gr. of morphine hydrochlorid.

The original formula of Dr. Samuel Jackson's Cough Syrup was as follows: Sassafras pith, 60 grains; acacia, 1 ounce; sugar, 28 av.ounces; morphine hydrochlorid, 8 grains; water, enough to make 32 fluidounces. The sassafras

pith was afterwards uniformly replaced by oil of sassafras, and the other constituents of the syrup have been more or less altered, so that a number of different formulas are in vogue in different sections of the country. Sometimes a small amount of Hoffmann's anodyne is added. It is recommended that the above be followed, if possible, for the sake of uniformity.—N. F.

See also Syrup of Morphine, Compound; also Syrup, Pectoral, Compound, which latter is also used as Jackson's Syrup.

Syrup, Pectoral, Compound. (Jackson's Cough Syrup.)

Fluid extract of ipecac.....m. 15
Fluid extract of senega.....m. 90
Fluid extract of rhubarb....fl.dr. 2
Morphine sulfategr. 4
Oil of sassafras...drops 18 or m. 8
Simple syrup, to make.....fl.oz. 16

Dissolve the morphine salt in about 4 fluidrams of syrup, then add the fluid extracts and the oil and enough syrup to make 16 fluidounces.—Cinc. Acad. Pharm.

This syrup is not to be dispensed when compound syrup of morphine is prescribed, although the latter name has been applied to this preparation. See Syrup of Morphine, Compound; also Syrup, Pectoral. The above formula is an Eclectic modification of Jackson's Syrup.

Syrup of Peppermint.

Peppermint herb, cut....av.oz. 1½
Alcoholfl.dr. 7
Waterfl.oz. 8
Sugarav.oz. 13

Moisten the drug with the alcohol. add the water, let macerate for 24 hours at a temperature of 60 to 70 deg. F., strain, and in 7 av.ounces of the colature dissolve the sugar by agitation.

—Germ. Pharm.

Syrup of Peru Balsam. (Syrupus Balsamicus.)

Peru balsamav.oz. 1
Sugar, water, each.....sufficient
Upon the balsam pour 9½ fluidounces

of hot water, set aside for 24 hours, occasionally agitating, filter, and in 8 av.ounces of filtrate dissolve 13 av.ounces of sugar.—Germ. Pharm.

Syrup of the Phosphates, Compound. (Chemical Food.)

I.

Precipitated calcium carbonate	gr. 512
Soluble ferric phosphate (U. S. P.)	gr. 256
Ammonium phosphate	gr. 256
Potassium bicarbonate	gr. 60
Sodium bicarbonate	gr. 60
Citric acid	av.oz. 23/4
Glycerin	fl.oz. 2
Phosphoric acid (85 p. c.)	fl.dr. 10 1/2
Orange flower water	fl.oz. 4
Tincture of cudbear	fl.dr. 4
Sugar	av.oz. 10
Water, to make	fl.oz. 32

Triturate the calcium carbonate with the potassium and sodium bicarbonates, the citric acid, glycerin, and orange flower water, and gradually add the phosphoric acid, stirring until solution has been effected. Dissolve the iron and ammonium phosphates in 8 fluidounces of hot water, cool, and add the solution to that previously prepared. Filter the whole through a pellet of absorbent cotton placed in the neck of a funnel, and receive the filtrate in a graduated bottle containing the sugar. Agitate until the latter is dissolved, then add the tincture of cudbear, and lastly, enough water to make 32 fluidounces.

Each fluidram contains about 2 gr. of calcium phosphate, 1 gr. each of the phosphates of iron and of ammonium, and smaller quantities of potassium and sodium phosphates.—N. F.

The above makes a preparation of practically the same strength as Parrish's. It differs from the latter in containing ferric instead of ferrous phosphate, citric acid instead of hydrochloric acid, being made with bicarbonates instead of carbonates, which is an advantage, as the former are to be had purer, etc. It is more permanent than Parrish's preparation, i. e., less liable to precipitate.

II. Parrish's original formula:

Ferrous sulfate	gr. 300
Sodium phosphate	gr. 360
Calcium phosphate	gr. 360
Glacial phosphoric acid	gr. 600
Sodium carbonate	gr. 20
Potassium carbonate	gr. 30
Cochineal, powder	gr. 60
Sugar	av.oz. 20
Orange flower water	fl.dr. 4
Hydrochloric acid, ammonia water, water, each	sufficient

Dissolve the iron sulfate in 1 fluidounce of boiling water and the sodium phosphate in 2 fluidounces of boiling water. Mix the solutions and wash the precipitated iron phosphate with water until the washings are tasteless.

Dissolve the calcium phosphate in 2 fluidounces of boiling water with sufficient hydrochloric acid to effect a clear solution; when cool, precipitate with ammonia water and wash the precipitate with water until the washings are tasteless.

To the freshly precipitated phosphates of calcium and iron, as thus prepared, add the phosphoric acid previously dissolved in water; when clear add the potassium and sodium carbonates, previously dissolved in water, and hydrochloric acid to dissolve any precipitate which may have formed. Now dilute with water to 11 fluidounces, add the sugar, toward the last add the cochineal, dissolve by heat, strain, cool, and add the orange flower water.

This preparation precipitates copiously and hence there are many modifications of this formula, such as Nos. I and III.

III. Brit. Form. formula for what it calls compound syrup of iron phosphate:

Iron wire, free from rust	gr. 32
Phosphoric acid, 85 p. c.	fl.dr. 7 1/2
Or 50 p. c. phosph. acid	fl.dr. 12 3/4
Calcium carbonate, precipitated	gr. 100
Potassium bicarbonate	gr. 7 1/2
Sodium phosphate, crystal	gr. 7 1/2
Cochineal, powder	gr. 25
Sugar	av.oz. 11 3/4
Distilled water, to make	fl.oz. 16

Mix the iron with 5 fluidrams of 85

p. c. acid and $5\frac{1}{2}$ fluidrams of distilled water (or with $8\frac{1}{2}$ fluidrams of 50 p. c. acid and 2 fluidrams of water) in a glass flask so that the iron is completely covered, plug the neck of the flask with cotton, and heat gently until the iron is dissolved.

Dissolve the calcium carbonate in the remainder of the acid mixed with distilled water (the 85 p. c. acid with 14 fluidrams or the 50 p. c. acid with 12 fluidrams), allow to cool, and add the cooled iron solution. Add the potassium bicarbonate and sodium phosphate, dissolve, and filter the whole.

Mix the cochineal with 6 fluidounces of distilled water, boil for 15 minutes, and filter, adding through the filter enough distilled water to make $5\frac{1}{2}$ fluidounces of filtrate. In the latter dissolve the sugar by the aid of heat, strain, allow to cool, add the former filtrate, and finally distilled water enough, if necessary, to make 16 fluidounces.

Each fluidram of this syrup contains about $\frac{1}{2}$ gr. of iron phosphate, about $\frac{4}{5}$ gr. of calcium phosphate, with small quantities of potassium and sodium phosphates.

The preparation should be kept in filled bottles.

Syrup of Phosphates of Iron, Quinine and Strychnine. (Eaton's, Easton's or Aitkin's Syrup—Syrup of Three or Triple Phosphates.)

I.

Glycerite of the phosphates of iron, quinine and strychnineby measure part 1
Simple syrup....by measure parts 3

Mix the two; strain, if necessary.—

U. S. P.

Each fluidram contains $1\frac{1}{8}$ gr. of soluble iron phosphate and represents about $1\frac{1}{2}$ gr. of quinine and about $1\frac{1}{85}$ gr. of strychnine.

Great difficulty has been experienced in making a preparation which will remain permanent. The above is easy to make, but is quite different from the original, which contained 1 grain each of the phosphates of iron and quinine

and $\frac{1}{32}$ gr. of strychnine and was directed to be prepared as follows:

II. The original formula:

Ferrous sulfate, pure.....	gr. 208
Sodium phosphate, pure, clear crystals	gr. 250
Quinine sulfate	gr. 133
Strychnine	gr. 4
Phosphoric acid, 85 p. c....	fl.dr. 12
Or phosphoric acid, 50 p. c.	fl.oz. 2..dr. 5
Sugar	av.oz. 10 $\frac{1}{4}$
Distilled water, diluted sulfuric acid, ammonia water, each	sufficient

Dissolve the ferrous sulfate in 5 fluidrams, and the sodium phosphate in 10 fluidrams, of boiling water, mix the solutions, collect the precipitate, wash it until the washings are tasteless, and then let drain thoroughly.

Dissolve the quinine sulfate in $1\frac{1}{2}$ fluidounces of water with the aid of diluted sulfuric acid, precipitate with ammonia water, collect the precipitate, and wash it thoroughly. Dissolve this and the preceding precipitate and the strychnine in the phosphoric acid mixed with enough distilled water to make 9 fluidounces, add the sugar and enough distilled water to make 16 fluidounces, and dissolve by agitation without heat.

Instead of precipitating the quinine sulfate, quinine alkaloid may be used in the proportion of 118 grains.

The product should measure about 24 fluidounces; to get this, the iron precipitate should be well drained.

III. The Brit. Pharm. preparation is called "syrup of phosphate of iron with quinine and strychnine":

Iron, in wire.....	gr. 64
Phosphoric acid, 85 p. c....	fl.dr. 6
Or 50 p. c. phosphoric acid.....	fl.dr. 10 $\frac{1}{4}$
Quinine sulfate	gr. 108
Strychnine (alkaloid)	gr. 4
Simple syrup	fl.oz. 11 $\frac{1}{4}$
Distilled water, to make....	fl.oz. 16

Place the iron wire and the acid previously diluted with 10 fluidrams of water (or the 50 p. c. acid diluted with 6 fluidrams of water), in a small glass flask, close the neck of the latter with cotton, heat gently until the iron is dis-

solved, in the resulting solution dissolve the quinine sulfate and strychnine, filter into the syrup, and pass the remainder of the water through the filter.

The iron used may be in the form known as "card teeth."

Each fluidram of this syrup represents 1 gr. of anhydrous ferrous phosphate, $4\frac{5}{8}$ gr. of quinine sulfate, and $1\frac{1}{32}$ gr. of strychnine.

Syrup of Phosphates With Quinine and Strychnine Compound. (Compound Syrup of Hydrochlorophosphates.)

See Syrup of Quinine Phospho-Muriate, Compound, No. I.

Syrup of Phospho-Muriate of Quinine, Compound.

See Syrup of Quinine Phospho-Muriate, Compound.

Syrup of Poke, Compound. (Syrupus Phytolacæ Compositus.)

The following is a practical formula for this Eclectic preparation:

Poke root	gr. 580
American ivy bark.....	gr. 580
Black cohosh	gr. 290
Sheep laurel	gr. 290
Oil of sassafras	drops 3
Oil of wintergreen.....	drops 3
Sugar	av.oz. 10
Alcohol, water, each.....	sufficient

Mix the drugs, reduce to fine powder, add the oils, and extract by percolation so as to obtain 10 fluidounces of percolate, using as a menstruum a mixture of 1 volume of alcohol and 2 of water. In this dissolve the sugar, and then add enough simple syrup, if necessary, to make 16 fluidounces.

Syrup of Poppy. (Syrupus Papaveris —Syrupus Diacodii.)

I.

Tincture of poppy.....	fl.oz. 14
Sugar	av.oz. 13
Water, to make.....	fl.oz. 16

Evaporate the tincture of poppy, on a water bath, at a gentle heat, until its volume is reduced to $7\frac{1}{4}$ fluidounces. In this dissolve the sugar with a gentle heat, strain, and when the syrup is cold, add enough water to make 16 fluidounces.—N. F.

The tincture of poppy for the above

is to be prepared as follows (N. F.):

Poppy capsules, freed from seeds and in coarse powder	av.oz. $8\frac{1}{4}$
Glycerin	fl.oz. 2
Alcohol, water, each, to make	fl.oz. 16

Digest the poppy heads with 3 pints of boiling water during 2 hours, then express and strain. Evaporate the colature to 8 fluidounces, mix it with 4 fluidounces of alcohol, and set the mixture aside, well covered, until quite cold. Then filter, add the glycerin to the filtrate, and pass enough of a mixture of 2 volumes of water and 1 of water through the filter to make the product measure 16 fluidounces.

II. The above makes a preparation practically like that of the Brit. Pharm. 1885 (not recognized in present edition), which was made as follows:

Poppy capsules, freed from seeds, and reduced to No. 20 powder	av.oz. 9
Alcohol	fl.oz. 4
Sugar	av.oz. 16
Distilled water, boiling....	sufficient

Mix the poppy heads with 20 fluidounces of water, and infuse for 24 hours, stirring frequently; then pack in a percolator, add more water, and percolate slowly until about 80 fluidounces of percolate have been obtained or the drug is exhausted. Evaporate the percolate on a water bath until reduced to 15 fluidounces. When cold, add the alcohol, let the mixture stand for 12 hours, filter, evaporate off the alcohol from the filtrate and evaporate the remainder to $9\frac{1}{2}$ fluidounces, add the sugar, and dissolve.

The product should weigh 26 av. ounces (measuring about 19 fluidounces) and have the sp. gr. 1.330.

III. The corresponding preparation of the Germ. Pharm. is decidedly weaker and is prepared as follows:

Poppy heads, cut moderately fine	av.oz. 2
Alcohol	fl.dr. 13
Distilled water	fl.oz. $13\frac{1}{2}$
Sugar	av.oz. 13

Moisten the poppy heads with the alcohol, add the water, macerate for 24 hours, stirring occasionally, express, evaporate the liquid to a weight of 7 av.ounces, filter, and in this filtrate dissolve the sugar.

The N. F. suggests that this preparation may be extemporized by mixing 2 fluidounces of the tincture of poppy given under No. I with 14 fluidounces of simple syrup. This is an error; it should be at least 4 fluidounces of tincture with 12 of syrup.

Syrup of Quinidine.

Quinidine (alkaloid), crystals	gr. 240
Mucilage of acacia.....	f.oz. 1
Solution of saccharin.....	fl.dr. 4
Syrup of orange flowers, to make	f.oz. 16

Mix the quinidine with the mucilage and solution of saccharin, without breaking up the crystals, and add the syrup of orange flowers.—N. F.

This preparation must be well shaken before dispensing it.

Syrup of Quinine Phospho-Muriate, Compound. (Compound Syrup of Quinine Phospho-Hydrochlorid—Compound Syrup of Phosphates With Quinine and Strychnine.)

I.

Potassium bicarbonate.....	gr. 145
Magnesium carbonate.....	gr. 145
Calcium carbonate.....	gr. 145
Soluble ferric phosphate.....	gr. 128
Quinine hydrochlorid.....	gr. 32
Strychnine sulfate.....	gr. 1
Phosphoric acid, 85 p. c.....	fl.dr. 5½
Citric acid	gr. 540
Orange flower water.....	f.oz. 2
Glycerin	f.oz. 4
Sugar	av.oz. 8¾
Distilled water, to make.....	f.oz. 16

Mix the acids with 1½ fluidounces of distilled water in a capacious vessel, and gradually add the magnesium and calcium carbonates and the potassium bicarbonate. When effervescence has ceased and all is dissolved, make a solution of the ferric phosphate, the quinine hydrochlorid and the strychnine sulfate in the orange flower water by the aid of a little heat, and add this to the first solution, followed by the glycerin and sugar. Shake the mixture un-

til the sugar is dissolved, add enough distilled water to make 16 fluidounces, and filter.—N. F.

II.

Potassium bicarbonate	gr. 280
Magnesium carbonate	gr. 160
Calcium carbonate, precipitated	gr. 160
Iron phosphate, scale.....	gr. 128
Quinine hydrochlorid	gr. 32
Strychnine (alkaloid)	gr. 1
Phosphoric acid, U. S. P. or 85 per cent.	f.oz. 2½
Orange flower water.....	f.oz. 2
Simple syrup, to make.....	f.oz. 16

Dissolve the salts in a mixture of the phosphoric acid and the orange flower, and add the simple syrup.—Cinc. Acad. Pharm.

This preparation is to be freshly made when wanted for use.

Each fluidram contains ¼ gr. of quinine muriate, 1/120 gr. of strychnine, 1 gr. of iron phosphate, and about 4 gr. of the combined phosphates of potassium, magnesium and calcium.

Syrup of Raspberry. (Syrupus Rubi Idæi.)

Take any convenient quantity of fresh, ripe raspberries, reduce them to a pulp, and let stand at a temperature of about 20 deg. C., occasionally thoroughly stirring, until a small portion of the juice when filtered makes a clear mixture with half its volume of alcohol. Then separate the juice by pressing, and filter it. To every fluidounce of the filtrate (which should not be allowed to remain unprotected by sugar for more than 2 hours), add 1½ av.ounces of sugar, heat the mixture to boiling, avoiding the use of tinned vessels, and strain.—N. F. Appendix and U. S. P. 1880.

Keep the product in well-stoppered bottles in a cool and dark place.

The above is an acceptable mode of making any of the so-called concentrated fruit syrups.

The preparation of the Germ. Pharm. differs from the above only in directing a somewhat larger proportion of sugar, 13 av.ounces of sugar to 7 av.ounces of juice.

Syrup of Red Clover, Compound.

See Syrup of Trifolium, Compound.

Syrup of Red Poppy. (Syrupus Rhœados—Klatschrosen Saft.)

Red poppy petals.....av.oz. $4\frac{1}{4}$

Alcoholfl.dr. $6\frac{1}{2}$

Sugarav.oz. 12

Distilled watersufficient

Add the petals gradually to $6\frac{1}{2}$ fluid-ounces of the water kept hot on a water bath, stir frequently, and afterwards, the vessel being removed from the bath, infuse for 12 hours. Then express the liquid, strain, add the sugar, dissolve by heat, and, when the liquid is nearly cold, add the alcohol and enough distilled water to make the product weigh $19\frac{1}{4}$ av.ounces (measuring about 15 fluidounces).—Brit. Pharm.

Syrup of Red Root, Compound.

See Syrup of Ceanothus, Compound.

Syrup, Restorative. (Restorative Cordial.)

Thomsonian (in the Guide and the Materia Medica):

Poplar barkoz. 1

Bayberryoz. 1

Boil in 1 pint of water, strain off, add 7 ounces of sugar, dissolve the latter, skim the liquid, and add $\frac{1}{2}$ ounce of powdered peach-meats or cherry-stone meats. When cool, add $\frac{1}{2}$ pint of good brandy.

Bitter almonds may be used as a substitute for the peach-meats or cherry-stone meats when the latter are not obtainable.

Another formula is from Comfort's Practice, as follows:

White aspen poplar.....oz. $\frac{1}{2}$

Black aspen poplar.....oz. $\frac{1}{2}$

Bayberry root bark.....oz. 1

Boil a few minutes in 1 pint of water, strain, add 7 ounces of sugar, dissolve the latter, skim the liquid, and add $\frac{1}{2}$ ounce of finely powdered peach-meats and 6 fluidounces of brandy.

Syrup of Rhatany. (Syrup of Krameria.)

Fluid extract of krameria...fl.oz. 9

Simple syrupfl.oz. 11

—U. S. P.

Syrup of Rhubarb. (Rhabarber Saft.)

I.

Fluid extract of rhubarb....fl.dr. 13

Spirit of cinnamon.....m. 30

Potassium carbonategr. 72

Waterfl.dr. $6\frac{1}{2}$

Simple syrup, to make.....fl.oz. 16

Mix the spirit with the fluid extract, add the potassium carbonate dissolved in the water, and then the syrup.—U. S. P.

II.

For those who prefer not to make this syrup from the fluid extract, the U. S. P. 1880 formula is appended:

Rhubarb root, sliced.....av.oz. 2

Cinnamon, bruisedgr. 180

Potassium carbonategr. 60

Sugarav.oz. 14

Watersufficient

Mix the first three ingredients with 10 fluidounces of water and macerate the mixture in a glass or porcelain vessel for 12 hours. Then strain and filter, adding water through the dregs, if necessary, to make the filter measure $8\frac{1}{2}$ fluidounces; in the latter dissolve the sugar by agitation without heat, and strain.—U. S. P.

III. Brit. Pharm.:

Rhubarb, No. 20 powder..av.oz. 1

Coriander, No. 20 powder..av.oz. 1

Sugarav.oz. 12

Alcoholfl.oz. 4

Distilled waterfl.oz. 12

Moisten the mixed rhubarb and coriander with a portion of the mixed alcohol and water, set aside for some time, then pack in a percolator and pass the remainder of the liquid slowly through the drug. Evaporate the percolate to $6\frac{3}{4}$ fluidounces, filter, and dissolve the sugar by the aid of heat.

The product should weigh nearly 20 av.ounces (measuring nearly 16 fluidounces).

IV.

Rhubarb, cutav.oz. 1

Potassium carbonategr. 45

Boraxgr. 45

Cinnamon water, Germ.

Pharm.fl.oz. 2

Sugarav.oz. $12\frac{1}{2}$

Waterfl.oz. $7\frac{3}{4}$

Mix the rhubarb with the borax, po-

tassium carbonate and water, and macerate for 12 hours, agitating occasionally. Then express moderately, bring the colature to a boil, and filter. To $6\frac{1}{4}$ av.ounces of filtrate add the cinnamon water and sugar, and dissolve.—Germ. Pharm.

Syrup of Rhubarb, Aromatic. (Spiced Syrup of Rhubarb.)

Aromatic tincture of rhubarb	f.oz. $2\frac{1}{2}$
Potassium carbonate	gr. 8
Simple syrup, to make.....	f.oz. 16

Dissolve the potassium carbonate in the tincture, filter if necessary, and add the syrup.—U. S. P.

Syrup of Rhubarb and Potassium, Comp'd. (Neutralizing Cordial.)

I.

Fluid extract of rhubarb...f.dr.	2
Fluid ext. of golden seal...f.dr.	1
Potassium carbonate	gr. 120
Tincture of cinnamon.....	f.oz. 1
Spirit of peppermint.....	f.dr. 1
Simple syrup	f.oz. 4
Diluted alcohol, to make...	f.oz. 16

Dissolve the potassium carbonate in the syrup, and add the solution to the fluid extracts, tincture and spirit, previously mixed with 8 fluidounces of diluted alcohol. Mix well, add the remainder of the diluted alcohol, and filter, if necessary.—N. F.

This is only about half the strength of the regular Eclectic preparation in its essential ingredients. Formulas for this preparation vary greatly and so do the commercial syrups.

The original formula for this Eclectic preparation is the following:

II. Original formula of Dr. Beach:

Rhubarb, contused	av.oz. 2
Peppermint	av.oz. 1
Potassium bicarbonate	av.oz. 2
Sugar	av.oz. 1
Brandy	f.oz. 16
Water, boiling	f.oz. 32

Add the boiling water to the solids, allow to cool, add the brandy, macerate for 3 days, and strain.

However, the formula which is usually considered standard by Eclectics is that of Merrell; see No. III.

III. Merrell's formula (accepted Eclectic formula):

Rhubarb	gr. 580
Potassium bicarbonate	gr. 580
Cinnamon	gr. 290
Golden seal	gr. 290
Oil of peppermint.....	m. 10
Sugar	av.oz. 8
Brandy	f.oz. 22
Water, warm, to make....	f.oz. 32

The first four ingredients are to be made into a coarse powder, mixed with the brandy, macerated for 2 days, frequently agitated, then expressed with strong pressure; to the liquid add the oil dissolved in a small amount of alcohol. Extract the marc with enough warm water so that the liquid when added to the previous liquid will make 28 fluidounces. In the latter dissolve the sugar by agitation.

The preparation of manufacturers is usually made so as to contain the above proportions of rhubarb, cinnamon and golden seal. Very frequently only one-fourth as much potassium bicarbonate is used, and frequently it is potassium carbonate, which is used in one-fourth amount.

The above preparation is equally efficacious if made with a mixture of 1 volume of alcohol and 2 of water, instead of the brandy and water. The sugar may be increased to 16 av.ounces if a more agreeable preparation is desired; in this case the liquid obtained must not exceed 22 fluidounces.

Other formulas are also used, among which are the following:

IV. Stearn's modification:

Fluid extract of rhubarb...f.dr.	12
Fluid extract of cinnamon.f.dr.	4
Fluid extract of hydrastis...m.	160
Oil of peppermint.....	m. 4
Potassium carbonate.....	gr. 56
Sugar	av.oz. 12
Water, to make.....	f.oz. 16

Dissolve the potassium carbonate in a small amount of water and mix with the fluid extracts containing the oil of peppermint. Add water to make $5\frac{1}{2}$ fluidounces; filter and wash the filter with water to obtain 8 fluidounces of fl-

trate; in this dissolve the sugar and add water to make 16 fluidounces.

It will be observed that this is much stronger than any of the preceding and should not be used unless specifically demanded.

Syrup of Rose. (Syrup of Red Rose.)

I.

Fluid extract of red rose...f.oz. 2
Diluted sulfuric acid.....m. 80
Sugarav.oz. 12½
Water, to make.....f.oz. 16

Mix the fluid extract and acid with 5 fluidounces of water; allow the mixture to stand 2 hours, filter, and dissolve the sugar in the clear filtrate, by agitation. Add enough water to the liquid to make it measure 16 fluidounces, and strain if necessary.—U. S. P.

II.

Red rose petals.....av.oz. 1
Sugarav.oz. 15
Distilled water, boiling....f.oz. 9½

Infuse the petals in the water for 2 hours, strain and express, heat the colature to the boiling point, filter, and dissolve the sugar in the filtrate by the aid of heat.—Brit. Pharm.

The product should weigh 23 av. ounces (measuring about 18 fluidounces).

III. This preparation may also be prepared from inspissated extract of rose. See Extract of Rose, Inspissated.

Syrup of Rumex, Compound.

See Syrup of Yellow Dock, Compound.

Syrup of Saccharin.

Saccharingr. 150
Sodium carbonate, pure.....gr. 165
Or sodium bicarbonate, pure..gr. 180
Distilled waterf.oz. 32

Dissolve by the aid of a gentle heat.

This may be employed sometimes as a substitute for simple syrup.

Syrup of Sarsaparilla.

This is usually prepared as follows:

Fluid extract of sarsaparilla..f.oz. 4
Simple syrupf.oz. 12

Syrup of Sarsaparilla, Compound. (Syrupus Sarsæ Composita.)

I.

Fluid extract of sarsaparilla..f.oz. 13
Fluid extract of licorice r't..f.oz. 1
Fluid extract of senna.....f.oz. 1
Oil of sassafras.....drops 8
Oil of anise.....drops 8
Oil of wintergreen.....drops 8
Sugarav.oz. 43
Water, to make.....f.oz. 64

Add the oils to the mixed fluid extracts, shake the liquid thoroughly, add enough water to make 39 fluidounces, mix well, set aside for 1 hour, and filter. Dissolve the sugar in the filtrate, with the aid of a gentle heat; allow the liquid to cool, strain it, and add enough water through the strainer to make the liquid measure ½ gallon.—U. S. P.

II. The U. S. P. 1880 formula is appended for those who do not care to use fluid extracts:

Sarsaparilla root, No. 30
powderav.oz. 12½
Guaiac wood, No. 30 powd..av.oz. 1¾
Pale rose petals, No. 30 powderav.oz. 1
Licorice root, No. 30 powd..av.oz. 1
Senna, No. 30 powder.....av.oz. 1
Sassafras, No. 20 powder..av.oz. ½
Anise, No. 20 powder.....av.oz. ½
Wintergreen, No. 20 powd..av.oz. ½
Sugarav.oz. 50
Diluted alcohol, water,
eachsufficient

Mix the solid ingredients, except the sugar, with 28 fluidounces of diluted alcohol and macerate for 48 hours; then pack firmly in a cylindrical percolator, and gradually pour on diluted alcohol until 48 fluidounces of percolate are obtained. Evaporate this on a water bath to 24 fluidounces, add 8 fluidounces of water, filter, and through the filter add enough water to make the filtrate measure 32 fluidounces. In the latter dissolve the sugar by agitation without heat, and strain.

The guaiac and rose may be omitted, as they are not present in the U. S. P. 1890 formula and do not serve any good purpose; the sassafras, anise and wintergreen are preferably used in the form

of volatile oils, which should be added near the latter end of the process.

Syrup of Senega.

I.

Fluid extract of senega.....part 1
(by measure)
Simple syrupparts 4
(by measure)

Mix them.—U. S. P.

The U. S. P. syrup of senega is three times the strength of the preparation of the Germ. Pharm., which fact should be borne in mind in compounding prescriptions or recipes written in Germany or written by physicians educated in Germany.

II.

Senega root, cut moderately
fineav.oz. 1
Alcoholfl.dr. 9½
Waterfl.oz. 8¾
Sugarav.oz. 12

Macerate the drug with the mixed alcohol and water for 2 days, then express the liquid and filter the latter. In 8 av.ounces of filtrate dissolve the sugar.—Germ. Pharm.

Syrup of Senna.

I.

Fluid extract of senna.....fl.oz. 4
Oil of coriander.....m. 40
Simple syrup.....fl.oz. 12

Dissolve the oil in the fluid extract and add the syrup.—U. S. P.

The preparations of the Brit. and Germ. Pharms. differ considerably from that of the U. S. P. The former is made by a very complicated process and represents over 8 av.ounces of drug in 16 fluidounces. The preparation of the Germ. Pharm. represents but about 2 av.ounces of drug in 16 fluidounces and is flavored with fennel seed.

Syrup of Senna, Aromatic.

Fluid extract of senna.....fl.oz. 2
Jalapgr. 360
Rhubarbgr. 128
Cinnamongr. 30
Clovegr. 30
Nutmeggr. 15
Oil of lemon.....m. 10
Sugarav.oz. 13
Diluted alcohol, to make...fl.oz. 16

Reduce the drugs to moderately fine powder, add to it the oil of lemon and percolate it, in the usual manner, with diluted alcohol. Reserve the first 6 fluidounces of percolate, add the fluid extract, and dissolve in this the sugar, with the aid of a gentle heat, if necessary, but avoiding loss of alcohol by evaporation. Allow the solution to cool, collect a further portion of percolate, and add it to the previous liquid so as to make 16 fluidounces of liquid.—N. F.

Each fluidram represents 7½ gr. of senna, 3 gr. of jalap, and 1 gr. of rhubarb with aromatics.

Syrup of Senna, Compound.

Fluid extract of senna (U.

S. P.)fl.dr. 17
Fluid extract of rhubarb...fl.dr. 4¼
Fluid extract of buckthorn...fl.dr. 4¼
Oil of wintergreen.....m. 30
Alcoholfl.oz. 1
Simple syrup, to make....fl.oz. 16

Dissolve the oil in the alcohol, and add this to the mixed fluid extracts. Then add enough syrup to make 16 fluidounces, and mix by agitation.

Each fluidram represents 8 gr. of senna, 2 gr. of rhubarb, and 2 gr. of buckthorn.—N. F.

Syrup of Senna with Manna. (Syrupus Mannatus—Compound Syrup of Manna.)

This preparation of the former Germ. Pharm. may be extemporized as follows:

Syrup of senna, U. S. P.....fl.oz. 2½
Simple syrupfl.oz. 5½
Syrup of manna, N. F.....fl.oz. 8

This preparation may be made from the ingredients of the two syrups as follows:

Senna, cutgr. 270
Fennel, bruisedgr. 30
Mannaav.oz. 1
Sugarav.oz. 12
Watersufficient

Heat 10 fluidounces of water to boiling, add the senna, fennel and manna, macerate for 24 hours, stirring occasionally, strain through thick flannel, and filter the colature, adding more warm water to the mass on the strainer so

that the filtrate measures $8\frac{1}{2}$ fluidounces. In the latter dissolve the sugar by agitation.

Syrup, Simple. (Syrup—Syrupus—Syrupus Simplex, Albus or Sacchari—Weisser Sirup—Weisser Zucker Sirup.)

Sugar, dry, crystalline granules (i. e., so-called "granulated")av.oz. 57
Distilled water, to make...gall. $\frac{1}{2}$

Dissolve the sugar, with the aid of heat, in 29 fluidounces of distilled water, raise the temperature to boiling, strain the liquid, and pass enough distilled water through the strainer to make the product, when cold, measure 64 fluidounces, and mix the whole thoroughly.—U. S. P.

While these are the directions of the U. S. P., it is probable that they are followed by but few pharmacists. If distilled water is used, the boiling is unnecessary, in fact it is detrimental as it may produce changes in the sugar which will hasten subsequent fermentation of the syrup. Ordinary water may be used as well as distilled water, providing it be a fairly pure potable (drinking) water, the total amount of water that is to be used being first brought to a boil, then upon adding the sugar and stirring, the latter will dissolve in a few moments; allow the syrup to cool somewhat, and strain. The more usual proportions of sugar and water for preparing this syrup are $3\frac{1}{2}$ av.pounds of the former to 2 pints of the latter.

The straining cloth should preferably be of some kind of flannel; muslin is not satisfactory.

The granulated sugar of the market is as a rule quite pure, but always, or practically always, contains small amounts of ultramarine blue added for the purpose of making the product appear brilliantly white. This blue will pass through the finest straining cloth, will remain suspended in the syrup for a very protracted period of time, and will impart an opalescence to the product. The only way to obtain an abso-

lutely transparent product is by hot filtration through filter paper; or the sugar may be replaced by the purer form known as white "rock candy."

The U. S. P. gives an alternative process for making simple syrup, as follows:

Press down into the neck of a percolator of suitable size a pledget of purified cotton, not too tightly, and in such a manner that the cotton shall nearly fill the neck of the percolator, and moisten it with a few drops of distilled water. Place the 57 av.ounces of sugar into the apparatus, make its surface level without jarring or shaking, then carefully pour on 29 fluidounces of distilled water, and regulate the flow of the liquid, if necessary, so that it will pass out in rapid drops. Return the first portions of the percolate, until it runs through clear, and, when all the liquid has passed, follow it by distilled water, added in portions, so that all the sugar may be dissolved, and the product measure 64 fluidounces. Mix the total percolate thoroughly.

Care must be taken in inserting the pledget of cotton. It must not be too small, as it will then pack into the throat of the percolator and impede percolation.

The simple syrup of the Brit. Pharm. is made by dissolving 2 av.pounds of sugar in $15\frac{1}{2}$ fluidounces of boiling distilled water, then adding boiling distilled water to make the product weigh 3 av.pounds.

The preparation of the Germ. Pharm. is made from 3 av.pounds sugar and 2 av.pounds of water.

Syrup of Sodium Hypophosphite.

See Syrup of Hypophosphite of Sodium.

Syrup of Spikenard, Compound.

See Syrup of Aralia, Compound.

Syrup of Squill. (Syrupus Scillæ.)

Vinegar of squill.....fl.oz. $7\frac{1}{4}$
Sugarav.oz. $13\frac{1}{2}$
Water, to make.....fl.oz. 16

Dissolve the sugar in the vinegar with the aid of a gentle heat, then strain, and

when the strained liquid is cold, add enough water through the strainer to make the liquid measure 16 fluidounces.

—U. S. P.

The syrup of the Brit. Pharm. is made by dissolving 14¼ av.ounces of sugar in 7¼ fluidounces of vinegar of squill, Brit. Pharm., by the aid of a gentle heat.

This preparation may be also made from an acetic fluid extract of squill.

Syrup of Squill, Compound. (Hive Syrup.)

I.

Fluid extract of squill.....fl.dr.	10½
Fluid extract of senega.....fl.dr.	10½
Tartar emetic	gr. 15
Purified talcum	gr. 150
Sugar	av.oz. 12½
Water, to make.....fl.oz.	16

Mix the fluid extracts, evaporate them, in a tared dish, on a water bath, to a weight of 1¾ av.ounces and mix this residue with 5½ fluidounces of water. When the mixture is cold, incorporate with it intimately the talcum, filter, pass enough water through the filter to make the filtrate measure 6½ fluidounces, and to this add the tartar emetic dissolved in 3 fluidrams of hot distilled water. Dissolve the sugar in this liquid by agitation, without heat, strain, and add enough water through the strainer to make the product measure 16 fluidounces.—U. S. P.

The sugar may also be dissolved in the liquid by percolation as described under simple syrup. See Syrup, Simple.

This preparation contains very nearly 1 grain of tartar emetic to the fluidram.

II.

For those who do not care to use the fluid extracts in making this preparation, the U. S. P. 1880 process is appended:

Squill, No. 30 powder.....av.oz.	1¼
Senega, No. 30 powder.....av.oz.	1¼
Tartar emetic	gr. 15
Calcium phosphate, precipitated....	gr. 45
Sugar	av.oz. 12
Diluted alcohol, water, each sufficient	
Mix the squill and senega, moisten	

with 3 fluidounces of diluted alcohol, and macerate for 1 hour. Transfer to a conical percolator, and gradually pour diluted alcohol upon it until 10 fluidounces of percolate are obtained. Boil this for a few minutes, then evaporate it by means of a water bath to 4 fluidounces; add 2 fluidounces of boiling water, triturate the mixture with the calcium phosphate, filter, and add through the filter enough warm water to make the filtrate measure 8 fluidounces. In this dissolve the sugar by agitation without heat, and strain. Lastly dissolve the tartar emetic in 4 fluidrams of hot distilled water and mix it with the syrup.

Syrup of Starch Iodid.

The following is one method of making this preparation:

Iodin	gr. 30
Starch	gr. 250
Ether, water, sugar, each.....	sufficient

Dissolve the iodine in ether, pour the solution on the starch and triturate until all the ether has evaporated. Then transfer the mixture to a porcelain capsule and heat on a water bath for ½ hour, stirring very frequently. At first considerable iodine vapor is evolved, but this soon ceases. From the soluble starch iodide thus formed, the syrup may be prepared by dissolving 84 gr. in 7½ fluidounces of hot water, and in the solution dissolving 14 av.ounces of sugar.

This syrup represents 1/10 per cent. of iodine.

This preparation may also be made from soluble iodized starch. See Starch, Iodized.

Syrup of Stillingia. (Syrup of Queen's Root.)

The following is a practical formula for this Eclectic preparation:

Stillingia	gr. 1160
Prickly ash berries.....	gr. 580
Sugar	av.oz. 10
Alcohol, water, each.....	sufficient

Reduce the drugs to moderately coarse powder, extract by percolation with a mixture of 1 volume of alcohol and 2

of water so as to obtain 10 fluidounces of percolate; in the latter dissolve the sugar by agitation, strain, and, if necessary, add simple syrup to make 16 fluidounces of product.

Syrup of Stillingia, Compound.

I.

Comp. fl. ext. of stillingia..fl.oz.	4
Purified talcum	gr. 120
Sugar	av.oz. 12
Water, to make.....fl.oz.	16

Mix the fluid extract with the talcum, and afterwards with 4½ fluidounces of water, and shake them together thoroughly. Then pour the mixture upon a wetted filter, add the sugar to the filtrate, and pass enough water through the filter to make the product, after the sugar has been dissolved by agitation, measure 16 fluidounces.

Each fluidram represents 15 m. of compound fluid extract of stillingia (see Extract, Fluid, of Stillingia, Compound).—N. F.

The above is an Eclectic preparation, and is of the same strength as the usual Eclectic preparation. In No. II, the drugs themselves are used.

II. The following is a practical modification of the original Eclectic formula:

Stillingia	av.oz. 2
Turkey corn	av.oz. 2
Blue flag	av.oz. 1
Elder flowers	av.oz. 1
Pipsissewa leaves	av.oz. 1
Coriander	av.oz. ½
Prickly-ash berries	av.oz. ½
Sugar	av.oz. 10
Alcohol, water, each.....	sufficient

Mix the drugs, reduce to moderately fine powder, and extract by moistening, macerating and percolating in the usual manner, using a menstruum of 1 volume of alcohol and 2 of water, to obtain 10 fluidounces of percolate. In the latter dissolve the sugar by agitation, strain, and add enough simple syrup, if necessary, to make 16 fluidounces.

Syrup, Strengthening.

The following is credited to Thomsonian practice:

Comfrey	oz. 4
Elecampane	oz. 2

Horehound	oz. 1
Beth root, powder.....	oz. ½
Brandy	pint 1
Sugar	pound 1
Water	quarts 3

Boil the first three drugs with the water down to 3 pints, and add the remaining ingredients.

Syrup of Styrax or Storax.

Storax	av.oz. 1
Water, hot	fl.oz. 10
Sugar	av.oz. 13

Pour water on storax, macerate for an hour, agitating frequently, strain, and in the colature dissolve the sugar.—H. modified.

Syrup of Sunflower.

Sunflower seed, bruised....	av.oz. 2
Water	fl.oz. 40
Sugar	av.oz. 12
Holland gin	fl.oz. 12

Boil the seed with the water until but 24 fluidounces of liquid remain, strain, in this dissolve the sugar, and add the gin.—Eclectic.

See also Syrup of Helianthus, Compound.

Syrup of Sunflower, Compound.

See Syrup of Helianthus, Compound.

Syrup of Sweet Gum.

See Syrup of Liquidambar.

Syrup of Tamarinds

Tamarind pulp	av.oz. 4
Sugar	av.oz. 5
Water	sufficient

Digest the pulp with 8 fluidounces of hot water on a water bath for an hour, express gently and strain, in the colature dissolve the sugar by the aid of heat, strain, and add enough water to the product to make it weigh 8 av.ounces.—H.

Syrup of Tar.

I.

Pine tar	gr. 36
Alcohol	fl.dr. 6½
Magnesium carbonate	gr. 72
Clean, white sand.....	gr. 75
Sugar	av.oz. 14¼
Water, to make.....	fl.oz. 16

Mix the tar intimately, in a mortar, with the sand, add 1½ fluidounces of water, and after kneading the mass thor-

oughly with the pestle, throw the water away. Treat the residue with alcohol, and, when the tar is dissolved, add the magnesium carbonate and $\frac{3}{4}$ av.ounce of sugar, and after thorough trituration add $6\frac{1}{2}$ fluidounces of water; stir the mixture occasionally during 2 hours, and filter. Dissolve the remainder of the sugar in the clear filtrate by gentle heat, strain, and add enough water to make the liquid measure 16 fluidounces.—U. S. P.

II. The preparation of the Brit. Form. is practically like that of the U. S. P. 1890, the tar being rubbed with sand, washed with water, then treated again with water, filtered, and sugar and glycerin added to the filtrate. The process of the present U. S. P. is superior.

Syrup of Tolu. (Syrup of Balsam of Tolu—Sometimes Called Syrupus Balsamicus.)

I.

Tincture of tolu.....	fl.dr.	13
Magnesium carbonate	gr.	150
Sugar	av.oz.	27½
Water, to make.....	fl.oz.	32

Rub the tincture in a mortar with the magnesium carbonate and 2 av.ounces of sugar, gradually add 15 fluidounces of water, with constant trituration, and filter. Dissolve the remainder of the sugar in the clear filtrate, with the aid of a gentle heat, strain the syrup while hot, and add enough water to the product to make it measure 32 fluidounces.—U. S. P.

The sugar may also be dissolved in the filtered liquid by percolation as described under simple syrup. See Syrup, Simple.

The above process is practically that of the U. S. P. 1870, an excellent process, and superior to those of the U. S. P. 1880 and 1890.

II.

Tolu balsam	av.oz.	½
Sugar	av.oz.	12¾
Distilled water	sufficient	

Boil the balsam with 8 fluidounces of water for half an hour in a lightly cov-

ered vessel, stirring frequently. Then remove from the source of heat and add distilled water, if necessary, so that the liquid when cold shall measure $6\frac{1}{4}$ fluidounces. Filter the solution, add the sugar, and dissolve by the aid of a water bath.—Brit. Pharm.

The product should weigh $19\frac{1}{4}$ av.ounces.

This is similar to the process of the U. S. P. 1880.

Syrup of Trifolium, Comp. (Comp. Syrup of Red Clover.)

Fl. ext. red clover blossom..	fl.dr.	10
Fluid ext. of burdock root..	fl.dr.	5
Fluid extract berberis aquifolium	fl.dr.	5
Fluid ext. cascara amarga..	fl.dr.	5
Fluid ext. of poke root....	fl.dr.	5
Fluid ext. prickly-ash bark....	m.	75
Potassium iodid	gr.	144
Sugar	av.oz.	11
Distilled water, to make...	fl.oz.	16

Mix the fluid extracts with enough water to make $9\frac{1}{2}$ fluidounces, let stand one hour, filter, and percolate the filtrate through the sugar. Dissolve the iodid in the syrup, and add enough water to make 16 fluidounces.—Cinc. Acad. Pharm.

The above is somewhat stronger than the preparations of the market. The latter contain in 16 fluidounces $8\frac{1}{2}$ fluidrams of red clover blossom, $4\frac{1}{4}$ each of the fluid extracts of burdock root, berberis aquifolium, cascara amarga, and poke root, also the same amount of fluid extract of stillingia, 64 minims of fluid extract of prickly-ash bark, and 128 grains of potassium iodid.

Syrup, Violet. (Syrupus Violæ or Violarum—Veilchen Sirup or Saft.)

Fresh petals of violets, carefully freed from calyces, anthers and stigmas....	av.oz.	13½
Sugar	av.oz.	14
Distilled water	sufficient	

Heat 24 fluidounces of distilled water in a well-tinned (or porcelain or enameled-iron) vessel to about 45 deg. C., add the petals, stir quickly with a glass rod, macerate for 3 minutes, then throw on a carefully cleansed linen strainer,

and express strongly. Transfer the marc, after weighing, to well-tinned vessel on a water bath, add boiling hot distilled water to make a total weight of $10\frac{1}{2}$ av.ounces, and digest for 10 to 12 hours, and express in a well-tinned press (if possible). In $7\frac{3}{4}$ av.ounces of liquid dissolve 14 av.ounces of sugar on a water bath in a well-tinned vessel.

—H.

To make a nice syrup, the petals should be freed from calyces, etc., with clean, dry hands, the water must not contain traces of ammonia, and the sugar must be free from alkaline earths. For the latter reason, white rock candy should be preferred to other forms of sugar.

If fresh petals are not available, the syrup may be prepared factitiously as follows:

Alkanet, bark of root.....	gr. 48
Ipecac root	gr. 12
Orris root	gr. 72
Sodium carbonate, crystal....	gr. 72
Alcohol	fl.oz. 2
Distilled water, warm.....	fl.oz. 7
Sugar	av.oz. 14

Mix the first four ingredients, reduce to coarse powder, add the distilled water, mix well, then add the alcohol, infuse for one hour, express, and in 8 av.ounces of colature dissolve the sugar by the aid of a gentle heat.—H.

Syrup of White Pine, Comp. (White Pine Expectorant or Balsam—White Pine Cough Syrup—Syrupus Pini Strobi Compositus.)

White pine bark.....	av.oz. 3
Wild cherry bark.....	av.oz. 3
Spikenard root	gr. 150
Balm of gilead buds.....	gr. 150
Bloodroot	gr. 120
Sassafras bark	gr. 100
Morphine sulfate	gr. 8
Chloroform	m. 90
Sugar	av.oz. 26
Alcohol, water, simple syrup, each, to make.....	fl.oz. 32

Reduce the vegetable drugs to moderately coarse powder, moisten the powder with a menstruum composed of 1 volume of alcohol and 7 volumes of water, and macerate for 12 hours. Then percolate with the same menstruum, un-

til 16 fluidounces of tincture have been obtained, in which dissolve the sugar and the morphine sulfate; lastly, add the chloroform, and sufficient simple syrup to make 32 fluidounces, and strain.

—N. F.

White pine bark is the bark of *Pinus Strobus*. Much of this drug found in the market is valueless, particularly that which is purchased in the ground condition.

The ingredients of the N. F. preparation differ somewhat from those of the better class of preparations in the market. These latter are usually made to contain 960 grains each of white pine and wild cherry, 128 each of spikenard and balm of gilead, 112 of bloodroot, 64 of sassafras, 6 of morphine and 128 minims of chloroform to make 32 fluidounces of the preparation. The morphine salt used is the acetate, but the sulfate will serve equally well.

A cheaper preparation and one which is almost as efficient as the above may be made by using a menstruum of glycerin and water as in the following:

White pine	av.oz. 8
Wild cherry	av.oz. 8
Balm of gilead buds.....	av.oz. 1
Spikenard	av.oz. 1
Bloodroot	av.oz. $\frac{3}{4}$
Sassafras	av.oz. $\frac{1}{2}$
Chloroform	fl.oz. $\frac{1}{2}$
Morphine sulfate	gr. 24
Sugar	av.oz. 64
Glycerin, water, simple syr- up, each, to make.....	gall. 1

Mix the first six drugs, reduce them to moderately fine powder, moisten with a mixture of 1 volume of glycerin and 3 of water, allow to macerate in a closed vessel for 24 hours, pack in a percolator, and extract with the same menstruum so as to obtain 80 fluidounces of percolate. In the latter dissolve the morphine and sugar by agitation, strain, and to the colature add the chloroform and enough simple syrup to make 1 gallon.

Sometimes 2 av.ounces of ammonium chlorid is added to the above mixture.

Owing to the difficulty of incorpora-

ting the balm of gilead buds with the other drugs and also owing to its resinous character, it is best to bruise this drug alone in a mortar, add 3 fluid-ounces of alcohol, macerating for several hours, decanting the liquid, adding 2 fluidounces more of alcohol, macerating again, and finally straining the liquid through a pellet of cotton into the solution of sugar and morphine in the percolate. This may be objected to as it makes a turbid preparation.

When the syrup is used for ordinary counter sale, it is best to omit the morphine.

Syrup of Wild Cherry. (Syrup of Virginian Prune, Brit. Pharm.)

Wild cherry bark, No. 20 powder	av.oz. 5
Glycerin	fl.oz. 5
Sugar	av.oz. 23½
Water, to make.....	fl.oz. 32

Moisten the drug with a sufficient quantity of water and macerate for 24 hours in a closed vessel; introduce the glycerin into a graduated receiving bottle. After the expiration of the 24 hours pack the drug firmly into a cylindrical glass percolator, and gradually pour water upon it until the percolate and glycerin combined measure 15 fluid-ounces (occasionally agitating the liquid during percolation). Dissolve the sugar in the liquid by agitation, without heat, strain, and pass enough water through the strainer to make the product measure 32 fluidounces.—U. S. P.

The sugar may also be dissolved in the liquid by percolation as described under simple syrup. See Syrup, Simple.

The preparation of the Brit. Pharm. differs from the above only in containing half the amount of glycerin.

In the U. S. P. 1890 the same proportions of liquids and drug were used, but the drug was extracted with mixed water and glycerin and the product was therefore of a dark red color and astringent taste.

This preparation should never be made by mixing the ordinary commer-

cial fluid extract of wild cherry with simple syrup.

Syrup of Wild Cherry, Compound.

I. This preparation is stated to be used in some portions of the south:

Morphine acetate	gr. 3
Tincture of bloodroot.....	fl.dr. 2
Wine of antimony.....	fl.dr. 3
Wine of ipecac.....	fl.dr. 3
Syrup of wild cherry.....	fl.oz. 3

Some filter this mixture, others dispense it unfiltered.

II. This is said to be used in some portions of New England:

Fluid extract of wild cherry.....	fl.oz. 2½
Fluid extract of ipecac.....	fl.dr. 4
Fluid extract of bloodroot.....	fl.dr. 4
Morphine sulfate	gr. 8
Tartar emetic	gr. 2
Simple syrup, to make.....	fl.oz. 16

The morphine sulfate and tartar emetic should be dissolved in a small amount of hot distilled water before adding to the other ingredients.

Syrup of Yellow Dock, Compound. (Compound Syrup of Rumex—Scrofulous Syrup.)

This is a satisfactory formula for this Eclectic preparation:

Yellow dock	av.oz. 2
False bittersweet	av.oz. 1
American ivy bark.....	av.oz. 1½
Figwort	av.oz. ½
Sugar	av.oz. 10
Alcohol, water, each.....	sufficient

Mix the drug, reduce to fine powder and extract by percolation so as to obtain 10 fluidounces of product, using a menstruum composed of 1 volume of alcohol to 2 of water; in this percolate dissolve the sugar by agitation or percolation, adding enough simple syrup, if necessary, to make 16 fluidounces.

Syrup of Yerba Santa.

I.

Fluid extract of yerba santa.....	fl.oz. 1
Magnesium carbonate	av.oz. ½
Water	fl.oz. 7½
Sugar	av.oz. 14

Mix the fluid extract with the calcined magnesia and add the water gradually, with constant stirring; let it stand 24 hours and filter; add the sugar and dissolve with the aid of gentle heat.

II. Hellmuth's formula:

Yerba santa, No. 40 powd. av. oz. 2
 Magnesium oxid gr. 165
 Sugar av. oz. 12
 Alcohol, water, each. sufficient

Mix the drug intimately with 55 grains of the oxid, moisten with a mixture of 1 volume of alcohol and 7 of water, let stand for 24 hours, pack tightly in a percolator, and percolate with the same menstruum, taking care that the drug is always covered with menstruum, until 8 fluidounces of percolate are obtained. Mix this percolate with the remainder of the magnesium oxid, let stand exposed to the air for not less than 48 hours, stirring occasionally, and then run through filter paper until perfectly clear. Now add the sugar, dissolve the latter by agitation, and strain the syrup.

Syrup of Yerba Stanta, Aromatic.
 (Aromatic Syrup of Eriodictyon
 —Comp'd Syrup of Yerba Santa
 —Syrupus Corrigen.)

I.

Fluid extract of yerba santa. fl. dr. 4
 Solution of potassa. fl. dr. 3
 Comp. tinct. cardamom. fl. oz. 1
 Oil of sassafras. m. 4
 Oil of lemon. m. 4
 Oil of clove. m. 8
 Alcohol fl. dr. 4
 Sugar av. oz. 13
 Water, to make. fl. oz. 16

Mix the fluid extract and solution of potassa, then add 5 fluidounces of water previously mixed with the compound tincture of cardamom, and afterwards add the oils dissolved in the alcohol. Shake the mixture thoroughly, then filter it, and pour enough water through the filter to obtain 8 fluidounces of filtrate. Pour this upon the sugar contained in a bottle, and dissolve it by placing the bottle in hot water, frequently agitating. Lastly, cool the product and add enough water, passed through the filter previously used, to make 16 fluidounces.

This preparation is used chiefly for disguising the taste of quinine.

For those who desire to use the drugs,

the following formulas are appended:

II. Fenner's formula:

Yerba santa av. oz. 4
 Sweet orange peel. av. oz. $\frac{1}{2}$
 Cinnamon gr. 60
 Clove gr. 60
 Calcined magnesia av. oz. $\frac{3}{4}$
 Sugar av. oz. 27
 Alcohol, water, each, to
 make fl. oz. 32

Mix the drugs, reduce to moderately fine powder, incorporate thoroughly with the magnesia, moisten thoroughly with a mixture of 1 volume of alcohol and 7 of water and set aside for 24 hours. Then pack in a percolator, and percolate slowly with the same menstruum to obtain 16 fluidounces of percolate. In the latter dissolve the sugar by the aid of a gentle heat or by percolation.

The orange peel used should be the fresh peel which has been dried sufficiently to admit of grinding.

III. Huber's formula:

Yerba santa, No. 30 powder. gr. 240
 Licorice root, crushed. gr. 240
 White oak bark, crushed. gr. 120
 Oil of clove. drops 4
 Oil of lemon. drops 2
 Oil of sassafras. drops 2
 Glycerin fl. oz. 1
 Sugar av. oz. 12
 Water, to make. fl. oz. 16

Infuse the three drugs with 8 fluidounces of boiling water, allow to stand for 24 hours, agitating occasionally, then filter, adding water through the filter, if necessary, to obtain 7 fluidounces of filtrate. To the latter add the sugar, oils and glycerin, dissolve by agitation, strain, and through the strainer add enough water to make 16 fluidounces.

It will be observed that this preparation differs from the others in containing no alkali nor alcohol and in containing a tannin-bearing drug (oak bark), which combines with quinine to form a tannate which is insoluble in the saliva and is therefore tasteless. It also contains licorice as does Syrup of Licorice and Yerba Santa, and Syrup of Licorice, Aromatic, which see.

IV. Hellmuth's formula:

Syrup of yerba santa, No. II. fl. oz. 14
Aromatic tincture fl. dr. 14
Extract of licorice, powder... gr. 70
Mix well and strain.

In place of the extract of licorice, glycerite of licorice may be used to advantage, about 3 fluidrams.

The aromatic tincture used may be that of the N. F., but the following is to be preferred for the above syrup:

Cinnamon av. oz. 1
Clove gr. 60
Cardamom gr. 60
Nutmeg gr. 60
Ginger, Jamaica gr. 60
Diluted alcohol, to make... fl. oz. 16

Reduce the drugs to quite fine powder, macerate with the diluted alcohol for 7 days, agitating occasionally, and filter clear.

V. Mueller's formula:

Fluid ext. of yerba santa.. fl. dr. 4
Comp. tinct. of cardamom.. fl. oz. 1
Oil of clove..... drops 20
Oil of lemon, pure and
fresh drops 2
Oil of sassafras..... drops 10
Alcohol fl. dr. 2
Magnesium carbonate gr. 120
Sugar av. oz. 14
Water, to make..... fl. oz. 16

Triturate the fluid extract thoroughly with the magnesium carbonate, add the tincture first diluted with 7 fluidounces of water, and then the oils dissolved in the alcohol. Mix the whole thoroughly, allow to stand about an hour, filter, percolate the filtrate through the sugar, and through the percolator add water enough to make 16 fluidounces.

VI.

Yerba santa av. oz. 4
Potassium bicarbonate av. oz. ½
Tincture of cudbear..... fl. dr. 4
Oil of cinnamon..... drops 16
Oil of clove..... drops 8
Oil of anise..... drops 8
Oil of coriander..... drops 5
Oil of cardamom..... drops 5
Alcohol fl. oz. 3
Sugar av. oz. 28
Water, to make..... fl. oz. 32

Boil the yerba santa and the potassium bicarbonate with 3 pints of water for ½ hour, strain, filter, evaporate the

filtrate to 12 fluidounces, dissolve the sugar in the filtrate by heat, and add the tincture of cudbear.

Dissolve the oils in the alcohol, add 3 fluidounces of water, and filter clear, through talcum, and add to the previously made syrup.

Syrup of Yerba Santa and Licorice.

See Syrup of Licorice and Yerba Santa. Syrup of Yerba Santa, Aromatic, Nos. III and IV; Syrup of Yerba Santa and Licorice, Concentrated; and Syrup of Yerba Santa, Licorice and Chocolate, Compound, also contain yerba santa and licorice.

Syrup of Yerba Santa, Licorice and Chocolate, Compound.

Falk's formula:

Chocolate (Baker's bitter)..
..... av. oz. 2. gr. 90
Extract of licorice, purified..
..... av. oz. 2. gr. 90
Fluid extract of yerba santa.. fl. oz. 1
Honey fl. oz. 5
Potassium carbonate gr. 60
Saccharin gr. 16
Oil of sassafras..... drops 6
Oil of anise..... drops 6
Oil of cinnamon..... drops 10
Oil of wintergreen..... drops 15
Water, to make..... fl. oz. 16

Shave the chocolate to thin slices into a mortar, add 2 fluidounces of water, place the mortar in a moderately warm place for 1 or 2 hours, stirring occasionally so as to form a smooth paste, and then add the extract of licorice and honey, mixing thoroughly. Dissolve the potassium carbonate in 1 fluidounce of water and in this dissolve the saccharin. Add this solution to the previously prepared mixture, and when the slight effervescence has ceased, add the fluid extract slowly and with constant trituration. Then incorporate the essential oils and enough water to make 16 fluidounces.

This combines the three best known disguisers of quinine, viz., yerba santa, licorice and chocolate, which are aided by the clinging sweetness of saccharin. The potassium carbonate serves the double purpose of permitting the mixing

of the resinous fluid extract of yerba santa with an aqueous medium, and by rendering the mixture slightly alkaline prevents the solution, to a certain extent, of suspended quinine sulfate.

This latter compound may be disguised by this syrup in the proportion of 4 grains of salt to a teaspoonful of syrup.

Syrup of Yerba Santa and Licorice, Concentrated.

Hassebrock's formula:

Fluid ext. of yerba santa.....	fl.oz.	1
Oil of lemon, pure and fresh	drops	3
Oil of sassafras.....	drops	3
Oil of clove.....	drops	6
Oil of cassia.....	drops	6
Oil of wintergreen.....	drops	6
Glycyrrhizin	gr.	120
Water, warm	fl.dr.	6
Honey, to make.....	fl.oz.	6

Evaporate the fluid extract on a water bath to half its volume, while still warm, add 1 fluidounce of honey, and mix well. Dissolve the glycyrrhizin in the water and mix thoroughly with 2 fluidounces of honey. Rub the oils with 1 fluidounce of honey, add this to the other mixture, and finally add honey enough to make 6 fluidounces.

This is a concentrated preparation of yerba santa and licorice, 1 fluidounce of which is capable of disguising the taste of 10 grains of quinine sulfate.

Syrup of Zinc Iodid.

Zinc, granulated	gr.	250
Iodin	gr.	820
Sugar	av.oz.	13½
Distilled water, to make.....	av.oz.	22¾

Digest the zinc in a bottle or flask with the iodine and 4 fluidounces of water, agitating occasionally, until the color of iodine has disappeared. Filter into a bottle containing the sugar, rinse the vessel with 2 fluidounces of water, and pass the rinsings through the filter with sufficient additional water to make the total weigh 22¾ av.ounces; finally agitate until the sugar is dissolved, and strain if necessary.—Eclectic.

The product contains about 10 per cent. of zinc iodide.

Tablets, Antiseptic.

These usually contain mercuric chlorid with some other constituents, such as citric acid or sodium chlorid. They occur in two sizes, a large and a small.

The large form usually appears on the market with either citric acid or sodium or ammonium chlorid. Those with citric acid contain 34/5 gr. of acid and 73/10 gr. of mercuric chlorid. Those with sodium chlorid contain 77/10 gr. of the latter with 73/10 gr. of mercuric chlorid. The third kind, called Dr. C. M. Wilson's, contain 77/10 gr. of mercuric chlorid and 73/10 gr. of ammonium chlorid.

If one of the above tablets be added to one pint of water, the product will be a solution of 1 of mercuric chlorid in 1000 parts of liquid.

The small tablets, called Bernay's, contain 141/50 gr. of mercuric chlorid and 87/100 gr. of citric acid.

One tablet in a pint of water makes a solution of 1 part of antiseptic in 4000 parts of liquid.

There are other "antiseptic tablets" besides those enumerated above. Seiler's alkaline antiseptic tablets contain the ingredients of Seiler's antiseptic solution. See Solution, Antiseptic, Seiler's.

Yarrow's antiseptic tablets contain the following ingredients:

Sodium borate	gr.	3
Boric acid	gr.	3
Zinc sulfocarbolate.....	gr.	3
Alum	gr.	3
Oil of spearmint.....	m.	1/10
Carbolic acid	gr.	1/20
Oil of wintergreen.....	m.	1/20
Eucalyptol	gr.	1/2
Thymol	gr.	1/8

Tablets of Nitroglycerin. (Trinitrin Tablets.)

Tablets of chocolate each weighing 5 grains and containing 1/100 grain of the trinitroglycerin of commerce. — Brit. Pharm.

Dose, 1 to 2 tablets.

Tablets, Plasma Nasal.

Each tablet is to contain

Sodium chlorid	gr. 5 1/2
Sodium sulfate	gr. 1 1/2
Sodium phosphate	gr. 1/4
Potassium chlorid	gr. 2/5
Potassium sulfate	gr. 1/4
Potassium phosphate	gr. 1/3
Menthol	gr. 1/15

This tablet was suggested by Dr. Murray McFarlane, and is a decided improvement over any other combination offered for the same purpose. One tablet dissolved in about 2 fluidounces of warm water yields a solution that closely resembles the blood serum in composition and specific gravity. The use of this solution, which does not favor unequal osmosis, will not cause pain or other disagreeable effects. The menthol in small amount is also beneficial on account of its soothing effect.

Tablets of (Artificial) Vichy Salt with Lithium, Effervescing.

Artificial Vichy salt, N. F.	av.oz. 7. gr. 370
Lithium citrate	av.oz. 9. gr. 65
Saccharated sodium bicarbonate	av.oz. 9. gr. 275
Saccharated tartaric acid.	av.oz. 4. gr. 350
Saccharated citric acid.	av.oz. 4. gr. 350

Granulate according to general formula under Salts, Effervescent, then divide into 1000 compressed tablets.

Each tablet contains 3 gr. of artificial Vichy salt and 4 gr. of lithium citrate.—Cinc. Acad. Pharm.

Talc, Purified.

Talc, fine powder.	av.oz. 25
Hydrochloric acid, U. S. P.	fl.dr. 21
Water	sufficient

Mix the powdered talc with about 100 fluidounces of boiling water, gradually add 14 fluidrams of the acid and boil the mixture during 15 minutes, then allow it to stand for 15 minutes. Decant and reject the supernatant liquid containing the finer particles of talc in suspension, and again boil the residue with 100 fluidounces of water mixed with 7 fluidrams of the acid and allow it to stand for 15 minutes. Again decant,

and reject the finer suspended particles and wash the coarser residue with water by repeated decantation until a portion of the wash-water, after filtering and acidifying with nitric acid, fails to become opalescent upon the addition of silver nitrate solution. Then transfer the magma to a close linen or muslin strainer, allow it to drain, and dry it at 110 deg. C.—U. S. P.

Purified talc is used as an aid in filtering turbid liquids, containing finely-divided matters in suspension, which are apt to pass through the filter, or to stop up its pores.

Tallows.

See Suets.

Tartar, Soluble. (Soluble Cream of Tartar — Tartarus Boraxatus — Kali Tartaricum Boraxatum — Boro-Tartrate of Potassium.)

Sodium borate	av.oz. 2
Potassium bitartrate, pure, powder	av.oz. 5
Distilled water	fl.oz. 15

Dissolve the borax in the water in a porcelain vessel by the aid of heat, then add cream of tartar, stir till dissolved, keeping the vessel meanwhile on a water bath, filter, evaporate the liquid at a gentle heat to thick consistency, allow to cool, break the tough mass into small pieces, dry these completely by placing in a moderately warm place, then powder, and transfer to well-stoppered bottles.—Germ. Pharm.

Teas.

See Species.

Thomsonian Remedies and Preparations.

Samuel Thomson was an "illiterate farmer," as he described himself, who was born in the eastern United States in 1769. After he had grown to manhood, he acquired some knowledge of the native herbs of his section of the country, of their medical properties and of medicine. From this time until his death he practiced medicine, but with the virulent opposition of the regular medical fraternity. No doubt many of his ideas relating to diseases and their

cure were fallacious, but so were the ideas of the regular profession, as has since been amply proved. Thomson gained headway in spite of all opposition and many of his preparations are still in use. Two of them, No. 6 and Composition Powder, are recognized by the N. F.

A course of treatment by Thomson meant vomiting, sweating, etc. His great axiom was that "heat is life, and cold is death." He vomited his patients with lobelia, the internal heat was produced with capsicum and other "hot" substances, the sweating was produced by hot drinks of various kinds, assisted by wrapping in blankets. Among the favorite remedies of Thomson were lobelia, capsicum, bayberry, skunk cabbage, ladies' slipper root, balmony, poplar bark, etc.

Thomson had several of his preparations patented, patents being issued in 1813, 1823 and 1836. He also wrote several medical works which were of unusual excellence, considering their source and the time at which they were written.

Thomson traveled about in the various portions of the then limited populated area of the United States, granting "patents" to practice his system of medicine to those who bought his book, price about \$25.00.

The preparations of Thomson were numbered by him from 1 to 6, but there were also a number of other preparations used by him. The formulas given in this work are copied from his "New Guide to Health" (edition 1827), "Thomsonian Materia Medica," by Samuel and John Thomson, the latter a son of Samuel (edition of 1840), "Thomsonian Practice of Medicine," by Reuben Chambers, and some other works, and also include some other formulas which are current as formulas for Thomsonian preparations. The formulas from the first-named are marked "From the Guide," from the second "From the Materia Medica," and from the third

"From Chambers' Practice." These formulas are copied as they appear in the original text; it will be observed that many are ambiguous.

Others of Thomson's followers also wrote works, some of them apparently with his sanction, or, at least, cognizance, and these mention preparations other than those used by Thomson, but which are now classed as Thomsonian preparations.

Thomson did not apparently have any regular or "set" formulas for some of his preparations. This accounts, in part at least, for the different formulas which appear for some of these preparations. This variation in formulas was probably due to the exhaustion, at times, of his stock of certain favorite drugs when other similar drugs were substituted, and also to changes he made as he acquired greater and more varied experience.

A man by the name of Beach imitated Thomson in his treatments, though his methods were less drastic, and he founded what is now known as the Eclectic school of medicine. The Thomsonians and the Eclectics were soon at war, and both again were opposed by the "regulars."

The name Thomson is often spelled with a "p" (Thompson), but it appears in his work without the "p," hence the spelling Thomson and Thomsonian used in this work.

The following is a list of the remedies:

"Number one" (No. 1) is lobelia (emetic herb).

This was used in three forms from the Guide and the Materia Medica), viz.:

1. Powder of the leaves and pods.
2. Tincture of the green herb (see Tincture of Lobelia).
3. Mixture of powdered seed, $\frac{1}{2}$ ounce or about a large spoonful, with the same quantity of powdered capsicum, a teaspoonful of ladies' slipper root, and 4 fluidounces of No. 6.

The powdered herb is dispensed unless one of the other forms is wanted.

"Number two" (No. 2.) (according to the Guide and the Materia Medica) is powdered capsicum, although red peppers, black pepper and ginger appear also to have been used. This is used for stimulating or "warming."

"Number three" (No. 3) is to scour the stomach and bowels, and remove "canker." This was composed (according to the Guide) of equal parts of bayberry root bark, white pond lily root, and the inner bark of the common hemlock, all in powder. One ounce of the powder was to be steeped in a pint of boiling water, the dose being a wineglassful.

If above is not to be had, use as a substitute sumach bark, berries or leaves, red raspberry leaves, witch-hazel leaves, marsh rosemary root, or squaw-weed or cocash; all are good for "canker" and may be used separately or together.

The Thomsonian Materia Medica gives the following as "compounds" of No. 3:

1.
Bayberry, powderoz. $\frac{1}{2}$
White pond lily root, powder.oz. $\frac{1}{2}$
Water, boilingfl.oz. 16
Steep, sweeten, and add a small amount of capsicum.
2.
Sumach (*rhus glabra*) leaves,
Red raspberry leaves,
Witch-hazel leaves,
Rosemary, each.....equal parts
3.
Red raspberry,
Avens root,
Marsh rosemary, all in fine
powder, eachequal parts
4.
Cranesbill, powderoz. 2
Witch-hazel, powderoz. 2
Black oak bark, well rossed,
powderoz. 1
5.
Sage,
Cocash (star flower),
New Jersey tea, all in powder, eachequal parts

6.
Hemlock bark,
Black oak bark,
Bayberry bark, all in powder, eachequal parts

It is recommended that a small amount of capsicum be added to any compound for "canker" and colds.

Thomson states that witch-hazel leaves may be used in connection with the other articles of No. 3, or they may be used alone as a substitute for the other articles, in all cases.

"Number four" (No. 4) is the "Biters," used to correct the bile and restore digestion, and is composed (according to the Guide) of equal parts of bayberry root bark, poplar bark, and balmony. The kind of poplar preferred is what is known as stinking poplar, although the white poplar may be used. When any of the above are not obtainable, bitter root (dogsbane) and golden seal may be used instead.

The "compounds" of number four are (according to the Guide and the Materia Medica):

1.
Balmony,
Bayberry,
Poplar bark, all in powder,
eachequal parts
To one ounce of this add a pint of boiling water and $\frac{1}{2}$ pint of alcohol.
2.
Golden sealoz. 1
Poplar barkoz. 2
Black cherry bark.....oz. 4
Ladies' slipperoz. $\frac{1}{2}$
Capsicumteaspoonful 1
Use all in powder and mix well. To an ounce of this powder add 1 ounce of sugar, $\frac{1}{2}$ pint of boiling water and 1 pint of best Holland gin.
3.
Balmony, powderoz. 2
Poplar, powderoz. 2
Bayberry, powderoz. $\frac{1}{2}$
Black birch, powderoz. 4
Capsicumoz. $\frac{1}{4}$
Sugarlb. 2
Take a teaspoonful night and morning in a little hot water, or an ounce may be put in 4 fluidounces of boiling water, to which add 1 $\frac{1}{2}$ pints of good gin or West India rum.

Other compounds of No. 4 are spice bitters, wine bitters, restorative and relaxing bitters, astringent bitters, dyspeptic powder, and ladies' spice bitters or woman's friend. For the formulas for these preparations, see Bitters, Spice; Bitters, Wine; Bitters, Restorative and Relaxing; Bitters, Astringent; Bitters, Spice, Ladies'; and Powder, Dyspeptic.

"Number five" (No. 5) is the "Syrup," for dysentery, to strengthen the stomach and bowels, and restore weak patients. The syrup referred to is the so-called restorative syrup or cordial. See Syrup, Restorative (or restorative cordial). Other compounds of No. 5 are the following (from the *Materia Medica*):

Syrup for Weakly Patients.—Take 1 pound each of the roots of elecampane, spikenard and comfrey and $\frac{1}{2}$ pound of boxwood flowers, bruise well together in a mortar, boil with 2 gallons for 1 hour, strain, and add while hot $\frac{1}{2}$ ounce of golden seal, 2 ounces of dyspepsia powders, 4 ounces each of prickly-ash seed, acacia and slippery elm bark, all in fine powder, 8 pounds of sugar, 1 gallon of good Holland gin and $\frac{1}{2}$ gallon of Madeira wine.

Syrup for Weakly Females.—Boil a large handful of comfrey roots, which have been well cleaned and bruised, with 2 quarts of water, strain and express the mixture, and to the liquid add 3 grated nutmegs, 1 ounce of dyspepsia powders, 1 pound of pulverized raisins, 6 pounds of loaf sugar, 1 pint of brandy, and 2 quarts of Madeira wine. When the mixture is cool, stir in the contents of 6 eggs which have previously been well beaten.

Syrup for Dysentery.—Boil 1 ounce each of bayberry bark and sumach (*rhus glabra*) leaves with 2 quarts of water for 1 hour, strain, add $\frac{1}{2}$ ounce each of golden seal and clove, and when cool, 1 pint of rheumatic drops.

Dysentery Syrup.—Make a strong decoction of equal parts of bayberry and

sumach leaves, strain while hot, to a gallon of decoction add 2 pounds of sugar, boil and skim, and add 1 ounce of golden seal and $\frac{1}{2}$ ounce of clove. When cold add $3\frac{1}{2}$ quarts of rheumatic drops.

Syrup for Dysentery or Relax.—Make a strong decoction of bayberry, or in lieu thereof sumach or marsh-rosemary, strain, and to 1 gallon of liquid add 2 pounds of brown sugar. When cold add 3 pints of hot drops (or enough to prevent souring). If necessary add more hot drops when taken.

Syrup for Relax or Summer Complaint.—Take of poplar bark, black cherry bark, of the green roots [this is wording of original text], and balmony, each 1 pound, golden seal and hops, each $\frac{1}{2}$ pound, boil these with 8 gallons of water and strain; then scald, add 25 pounds of sugar, remove the scum, and add while hot 1 pound of cloves. When cool add 2 gallons of rheumatic drops.

Syrup to Strengthen the Stomach and Bowels.—Boil 1 pound each of poplar bark and bayberry with 2 gallons of water, strain, add 7 pounds of sugar, scald and skim it, then add $\frac{1}{2}$ pound of powdered peach or cherry stone meats. When cool add $\frac{1}{2}$ gallon of good brandy.

Mucilaginous Syrup.—Take the pith of the root of buckhorn brake, bruise it, add water, either cold or hot, and beat with a spoon until of about the consistence of white of egg. Pour off the liquid and to 1 gallon add 2 pounds of sugar, 1 quart of best brandy, 2 ounces of powdered caraway seed and 1 glass of volatile tincture.

Antidyspeptic Restorative—

Poplar bark	lb. 5
Golden seal	lb. 2
Ginger	lb. 2
Balmony	lb. 1
Ladies' slipper	lb. 1
Clove	lb. 1
Unicorn	lb. 1
Cinnamon	lb. 1
Capsicum	lb. 1
Sugar	lb. 15

All in fine powder; mix well.

"Number six" (No. 6) was "rheumatic drops," also called "hot drops," to remove pain, prevent mortification, and promote a natural heat. See Tincture of Capsicum and Myrrh for the formula.

Brown Lobelia is lobelia seed.

Green Lobelia is lobelia herb.

Nervine.—This preparation has been credited to Thomsonian practice:

Tincture of aloes.....part 1

Ammoniated tincture of valerianparts 3

Compound tincture of cinchonaparts 4

Third Preparation of Lobelia, or "third preparation," as it is usually termed, is as follows (from the *Materia Medica*):

Lobelia seed, fine powder.....oz. 2

Capsicum, fine powder.....oz. 2

Cypripedium, powderoz. 1

No. 6 (tincture of capsicum and myrrh)fl.oz. 16

Shake well together, and preserve in small well-closed vials.

For the third preparation and others of composition powder, see Powder, Composition.

Astringent Bitters.—See Bitters, Astringent.

Restorative and Relaxing Bitters.—See Bitters, Restorative and Relaxing.

Spice Bitters.—See Bitters, Spice.

Ladies' Spice Bitters.—See Bitters, Spice, Ladies'.

Wine Bitters.—See Bitters, Wine.

Camphor Julep.—See Camphor Julep in its alphabetical order.

Confection of Hollyhock.—See this in its proper alphabetical place.

Antidyspeptic Conserve.—See Confection of Hollyhock.

Decoction of Sarsaparilla.—See in its alphabetical place.

Compound Decoction of Sarsaparilla.—See in its alphabetical place.

Rheumatic Liniment.—See Liniment, Rheumatic.

Compound Liniment of Soap.—See Liniment of Soap, Compound.

Stimulating Liniment.—See Liniment, Stimulating.

Astringent Ointment.—See Ointment, Astringent.

Burn Ointment.—See Ointment, Burn.

Fern Ointment.—See Ointment, Fern.

Healing Ointment.—See Ointment, Healing.

Nerve Ointment.—See Ointment, Nerve.

Tobacco Ointment.—See Ointment, Tobacco.

Wax Ointment.—See Ointment, Wax.

Ward's Paste.—See Paste, Ward.

Pills No. 3.—See this in its alphabetical place.

Anti-Canker Pills.—See Pills, Anti-Canker.

Emetic Pills.—See Pills, Emetic.

Laxative Pills.—See Pills, Laxative.

Compound Lobelia Pills.—See Pills, Lobelia, Compound.

Myrrh Pills.—See Pills of Myrrh.

Cancer Plaster.—See Plaster, Cancer.

Pitch Plaster.—See Plaster, Pitch.

Strengthening Plaster.—See Plaster, Strengthening.

Poultice.—See in its alphabetical place.

Capsicum Poultice.—See Poultice, Capsicum.

Catnep Poultice.—See Poultice, Catnep.

Charcoal Poultice.—See Poultice, Charcoal.

Emollient and Stimulant Poultice.—See Poultice, Emollient and Stimulant.

Myrrh Poultice.—See Poultice, Myrrh.

Stimulant and Astringent Poultice.—See Poultice, Stimulant and Astringent.

Wild Indigo Poultice.—See Poultice, Wild Indigo.

Yeast Poultice.—See Poultice, Yeast.

Composition Powder.—See Powder, Composition.

Cough Powder.—See Powder, Cough.

Dyspeptic Powder.—See Powder, Dyspeptic.

Nerve Powder.—See Powder, Nerve.

Volatile Salts.—See Salts, Volatile.

Bayberry Syrup.—See Syrup of Bayberry.

Garlic Syrup.—See Syrup, Garlic.

Lobelia Syrup.—See Syrup of Lobelia.

Restorative Syrup or Cordial.—See Syrup, Restorative.

Strengthening Syrup.—See Syrup, Strengthening.

Tincture of Capsicum and Myrrh.—See this in its alphabetical place.

Tincture of Lobelia.—See in its alphabetical order.

Volatile Tincture.—See Tincture, Volatile.

Thymol Iodid.

Thymolav.oz. 1

Potassium iodid....av.oz. 1 .gr. 70

Sodium hydrate, pure.....av.oz. 1

Distilled water, to make....fl.oz. 19

Solution of chlorinated soda,
sufficient, or about.....fl.oz. 58

Dissolve the solids in the water and gradually add the chlorinated soda solution, collect the precipitate on filter and wash with water until free from chlorids. Dry the precipitate carefully at a temperature not to exceed 27 deg. C.—Cinc. Acad. Pharm.

This compound is recognized by the new U. S. P., but no process given. The description reads: Dithymoliodid, obtained by the condensation of two molecules of thymol and the introduction of two atoms of iodine into the phenolic groups of the thymol; it contains 45 per cent. of iodine. Thymol iodid should be kept in amber-colored vials, protected from the light.

Thyroid, Dry.

This is recognized by the Brit. Pharm., in which the process of preparation is as follows:

Remove the external fat and connective tissue from thyroid glands taken from sheep immediately after killing. Cut the glands across, and reject any which contain cysts, are hypertrophied or are otherwise abnormal. Mince finely the healthy glands, dry at a temperature of from 32 to 38 deg. C., powder the dried product, remove all fat by treatment with petroleum ether, and again dry the residue.

Dose, 3 to 10 grains.

Tinctures.

The tinctures of the U. S. P. are usually made from crude drugs by extraction in a percolator, using as a menstruum alcohol, or mixtures in various proportions of alcohol and water. The drug, in a more or less fine condition, is moistened with a small quantity of menstruum, transferred to a percolator, and, without pressing, is allowed to stand, well covered, for 6 hours. The drug is then packed more or less firmly and enough menstruum is poured on to saturate it and leave a stratum of liquid above it. When the liquid begins to drop from the percolator, the lower orifice is closed, and, having closely covered the percolator, macerated for 48 hours (sometimes 24 hours). Percolation is then allowed to take place slowly, menstruum being added gradually until the required amount of percolate is obtained.

The kind of percolator generally used is that known as a cylindrical percolator which is only very slightly tapering. The percolator is best constructed of glass, as this is most convenient for retail pharmacy, but a percolator of any other suitable material not affected by drug or menstruum may be used. The size of the percolator selected should be in proportion to the quantity of drug extracted. When properly packed in the percolator, the drug should not occupy more than two-thirds of its height. The percolator is prepared for percolation by first gently pressing a small tuft of cotton into its throat, and this cotton may then be moistened with a few drops of menstruum to facilitate the passage of the first portion of percolate, which is often quite dense.

The rate of flow of percolate is regulated by means of a piece of rubber tubing which is attached to the lower orifice of the percolator by means of a perforated cork and a short segment of glass tubing. This rate of flow should not exceed 8 to 15 drops per minute, and by the expressions "slowly" and

"slow" percolation this rate is meant.

A few of the tinctures, such as those derived from resinous substances, which contain a large amount of soluble matter, are more conveniently and appropriately prepared by macerating the coarsely powdered drug with the menstruum for 7 days (sometimes 3 days), in a stoppered container, occasionally agitating, then filtering through absorbent cotton or a plain paper filter. A few other tinctures, besides those from resinous drugs, are also prepared by maceration, such as arnica, sweet orange peel, cardamom compound, lavender compound, lemon peel, opium camphorated, squill and fresh herbs. The maceration should be conducted preferably at a temperature of about 15 to 20 deg. C. and in a shady place.

The Brit. Pharm. gives the following specific directions for making tinctures:

The Process of Percolation.—Moisten the drug, in a properly comminuted condition, with the prescribed quantity of menstruum, and set the mixture aside in a closed vessel for 24 hours. Pack the mixture in a percolator, lightly, firmly or otherwise, according to the nature of the drug. Pour over the contents, at intervals, further portions of the menstruum, always maintaining a layer of liquid above the drug, and allow percolation to proceed, slowly at first and afterwards less slowly, until a sufficient quantity of the menstruum has been used to produce about three-fourths of the volume of the finished tincture, or until exhaustion of the drug has been effected. When the liquid ceases to pass, remove the marc from the percolator and submit it to pressure. Filter the expressed liquid, if necessary, either at once or after standing, for 24 hours; mix the filtrate with the percolate, and then add enough menstruum to produce the prescribed amount of tincture. [The U. S. P. directs percolation to be continued until the whole volume of tincture has been obtained, thus obviating the expression and filtration.]

The Process of Maceration.—Mix the drug, in a properly comminuted condition with the whole of the menstruum in a closed vessel for 7 days, agitate frequently, strain, press the marc, mix the expressed liquid with the strained liquid, and filter if necessary. [The U. S. P. directs maceration with about 90 per cent. of the menstruum for 7 days, agitating occasionally, filtering, and adding enough menstruum through the filter to make the prescribed quantity of tincture.]

The details and minor variations for the preparation of tinctures are left to the judgment of the pharmacist. A cylindrical percolator, preferably of glass or earthenware, may be employed in most cases, of such dimensions as to present to the menstruum a column of drug at least six times as high as wide. If a conical percolator be employed, the lower diameter should be not less than one-half the upper diameter. The preliminary treatment for 24 hours may be carried on in a closed percolator when desirable. Any necessary clarification may be effected by subsidence, filtration or both.

For all tinctures for which no working formula is provided by the U. S. P. or N. F. or some other work of authority, and the strength of which is not otherwise specified by the prescriber, the N. F. directs the following general process:

Drug, properly comminuted. av.oz. $1\frac{1}{2}$
Menstruum, to make. fl.oz. 14 $\frac{1}{2}$

The choice of the menstruum will depend upon the nature of the drug, and in some cases upon the uses to which the tincture is to be applied. In general, it may be stated that, if the useful constituents are soluble in alcohol, and but slightly or not at all soluble in water, strong alcohol should be used as a menstruum. Whenever it is possible, and consistent with the intended use of the preparation, the alcoholic strength of the menstruum should be made to approach that of diluted alcohol, the object being not only to exhaust the drug of

all its useful constituents, but also to retain them in solution.

If the drug is fibrous and can be dried and powdered without injury or loss of useful constituents, percolation is preferable. If the drug is resinous, and partly or almost wholly soluble in the menstruum, or if it is fibrous and cannot well be powdered without undergoing injury, maceration should be resorted to. In the latter case, the drug, comminuted as much as possible, should be kept in contact with three-fourths the full quantity of the menstruum, in a moderately warm and shady place—the term “moderately warm” signifying a temperature of 15 to 20 deg. C.—for two weeks, with occasional agitation; the liquid portion is then removed by pressure, and the residual marc displaced with sufficient menstruum, either in a funnel containing a cotton filter, or by remaceration and expression, until the full quantity of tincture is obtained, but in the case of remaceration, this should be done with several portions of the menstruum.

The process of preparing tinctures by percolation having been devised with the primary object of securing with celerity and economy products of practically uniform and reliable composition, and having replaced the older, and, in other respects, equally efficient, process of maceration, the latter may be resorted to in any case, if economy or time is no object, or if for other reasons it is desirable to resort to maceration, provided this “alternative method” is carried out as follows:

Reduce the drug to the finest practicable division, and having weighed out the specified quantity, place it into a stoppered bottle, and add the specified menstruum in quantity equal to the total volume of tincture to be made. Then macerate for at least two weeks, in a moderately warm and shady place. When required for use, decant the clear liquid and filter it through paper; express the

residual marc, and having filtered the expressed liquid through the same filter, mix the clear filtrates.

For the preparation of the homeopathic tinctures, see Tinctures, Homeopathic.

The above remarks and directions include more particularly to tinctures prepared from dry drug with alcohol or water or mixtures consisting essentially of one or both of these substances. For tinctures prepared with mixtures of alcohol and ether, see Tinctures, Ethereal. For tinctures prepared from fresh or undried drugs, see Tinctures of Fresh Herbs and Tinctures, Homeopathic. Tinctures made with aromatic spirit of ammonia or ammonia mixtures are called ammoniated or volatile tinctures. Examples are the ammoniated tinctures of guaiac and valerian.

Tincture of Aconite. (Tincture of Aconite Root.)

- I. Aconite root, No. 60 powder
(containing not less than
 $\frac{1}{2}$ per cent. of aconitine).av.oz. 1 $\frac{3}{4}$
Alcohol, water, each, to
makefl.oz. 16

Mix the alcohol and water in the proportion of 7 volumes of the former to 3 of the latter. Moisten the drug with 5 fluidounces of this menstruum, transfer it to a percolator, and, without pressing the powder, allow it to stand, well covered, for 6 hours; then pack it very firmly and pour on enough menstruum to saturate the drug and leave a stratum above it. When the liquid begins to drop from the percolator, close the lower orifice, and having closely covered the percolator, macerate for 48 hours. Then allow percolation to proceed slowly, gradually adding menstruum until 16 fluidounces of liquid are obtained.

The product should contain, when assayed, 0.045 gm. aconitine in 100 cc.—U. S. P.

The tincture of the U. S. P. 1890 was $3\frac{1}{2}$ times the strength of the above, which fact may lead to considerable confusion.

II.

Aconite root, No. 40 powder. gr. 365
 Alcohol, water, each, to
 make fl. oz. 16

Extract the drug by percolation, using a menstruum composed of 3 volumes of alcohol and 1 of water.—Brit. Pharm.

It will be noted that the U. S. P. preparation is twice as strong as this. It is also to be remarked that the preparation of the Brit. Pharm. 1885 was $2\frac{1}{2}$ times as strong as this preparation.

III.

Aconite, coarse powder... av. oz. $1\frac{1}{2}$
 Water fl. oz. $3\frac{1}{2}$
 Alcohol fl. oz. 13

Mix, macerate for 7 days, agitating occasionally, strain with expression, and filter.—Germ. Pharm.

IV. For the homeopathic and Eclectic tinctures, see Tincture of Aconite Root.

Tincture of Aconite, Fleming's.

I.

Aconite (root), fine powder... av. oz. $11\frac{3}{4}$
 Alcohol, to make..... fl. oz. 16

Moisten the aconite with enough alcohol to render it distinctly damp and to maintain it so after 24 hours' maceration in a well-covered vessel. Then pack it tightly in a percolator, and percolate it slowly, in the usual manner, with alcohol, until 16 fluidounces of tincture are obtained.

This preparation is still prescribed by many physicians. It is recommended that their attention be directed to the official fluid extract and tincture of aconite, so that the above preparation may be gradually abandoned.

II. When this preparation is required for immediate use, and it is not otherwise available, it may be prepared in the following manner:

Fluid extract of aconite (U. S. P.) fl. oz. 7
 Alcohol fl. oz. 3
 Mix them.—N. F.

Tincture of Aconite Leaf.

I.

Aconite leaves, moderately
 fine powder av. oz. $2\frac{1}{4}$
 Diluted alcohol, to make... fl. oz. 16

Moisten the drug with 1 fluidounce of the menstruum, macerate for 24 hours, pack firmly in a percolator, and gradually pour diluted alcohol until 16 fluidounces of percolate are obtained.—U. S. P. 1860.

II.

Aconite leaves, recently
 dried, fine powder..... av. oz. 2
 Diluted alcohol, to make... fl. oz. 16
 Prepare by percolation or maceration.—Eclectic.

Tincture of Aconite Root.

I.

Dry drug, No. 40 powder... gr. 730
 Alcohol, to make..... fl. oz. 16

Prepare by percolation. This is a 1x tincture. See Tinctures, Homeopathic.

This preparation may be made by diluting 2 volumes of U. S. P. tincture with 5 volumes of alcohol.—Homeopathic.

Dilutions are made with dispensing alcohol. See Dilutions, Homeopathic.

For the regular tincture of aconite root, see Tincture of Aconite.

II.

Aconite root, fine powder... av. oz. 6
 Diluted alcohol, to make... fl. oz. 16

Prepare the tincture by percolation or maceration.—Eclectic.

Tincture of Agaric. (Tincture of Boletus Laricis.)

Drug (the dried fungus)... gr. 730
 Distilled water fl. oz. $6\frac{1}{2}$
 Alcohol fl. oz. $10\frac{1}{4}$

This is intended to make 16 fluidounces. See Tinctures, Homeopathic; for method of preparation.

This makes a 1x tincture. Dilutions: 2x is to be made from 1 volume of tincture, 3 of distilled water, and 6 of alcohol; 3x and higher are to be made with dispensing alcohol.—Homeopathic.

Tincture of Aloes.

I.

Purified aloes, No. 40 powder... gr. 730
 Licorice r't, No. 40 powder... av. oz. $3\frac{1}{4}$
 Diluted alcohol, to make... fl. oz. 16

Macerate the drugs in a stoppered container, in a moderately warm place, with 12 fluidounces of menstruum, for 7 days, agitating occasionally; then filter

through absorbent cotton or a plain paper filter, and when the liquid has drained off completely, pass enough diluted alcohol through the residue to make 16 fluidounces of filtrate.—U. S. P. II.

Extract of barbadoes aloes...gr. 182
Fluid extract of licorice,
Brit. Pharm.fl.dr. 19
Diluted alcohol, to make...fl.oz. 16

Mix the extract in a closed vessel with 13 fluidounces of diluted alcohol, set aside for 48 hours, agitate occasionally until the extract is dissolved, add the fluid extract, filter, and pass enough diluted alcohol through the filter to make the product measure 16 fluidounces.—Brit. Pharm.

III.

Aloes, coarse powder....av.oz. 3
Waterfl.oz. 3½
Alcoholfl.oz. 13

Mix, macerate for 7 days, agitating occasionally, and filter.

Tincture of Aloes, Compound.

Aloes, coarse powder.....gr. 195
Rhubarb, cut moderately fine.gr. 32
Gentian, cut moderately fine.gr. 32
Zedoary, cut moderately fine.gr. 32
Spanish saffrongr. 32
Waterfl.oz. 3½
Alcoholfl.oz. 13

Macerate the drugs with the alcohol and water for 7 days, agitating occasionally, strain with expression, and filter.

—Germ. Pharm.

Tincture of Aloes and Myrrh, which see, is also called "compound tincture of aloes."

Tincture of Aloes and Myrrh. (Compound Tincture of Aloes—Elixir Proprietatis.)

Purified aloesgr. 730
Myrrhgr. 730
Licorice rootgr. 730
Alcohol, water, each, to
makefl.oz. 16

Extract the drugs, all in No. 40 powder, with a mixture of 3 volumes of alcohol and 1 of water, using the same method as for tincture of aloes.—U. S. P.

In the former editions of the U. S. P. there was no licorice in this formula. Without the licorice, and with the addi-

tion of 360 grains of Spanish saffron, the preparation is quite like elixir proprietatis. This latter is somewhat different again from elixir proprietatis Paracelsi (or Elixir of Aloes, Acid, which see).

Tincture of Ambergris. (Tinctura Ambra Grisea.)

Druggr. 18
Alcohol, to make.....fl.oz. 4

Macerate for about 7 days, agitating frequently, and filter.—Homeopathic.

This is a 2x tincture. Dilutions are made with dispensing alcohol. See Dilutions, Homeopathic.

Tincture of American Ivy. (Tincture of Virginia Creeper—Tincture of Ampelopsis Quinquefolia.)

Fresh drug (bark and young
twigs), containing solids...gr. 730
(plant moisture av.oz. 5)
Alcoholfl.oz. 11¾
—Homeopathic.

This is intended to make 16 fluidounces. It makes a 1x tincture. See Tinctures, Homeopathic, for method of preparation.

Dilutions: 2x is to contain 1 volume of tincture, 2 of distilled water, and 7 parts of alcohol; 3x and higher are to be made with dispensing alcohol. See Dilutions, Homeopathic.

Tincture, Antacid. (Antacid Mixture—Dysmenorrhea Mixture—Fenner's Guaiac Mixture—Falk's Antacid Mixture or Tincture—Griffith's Guaiac Mixture.)

Mercuric chloridgr. 40
Guaiac resin, fine powder...
.....av.oz. 2..gr. 80
Canada turpentine (balsam
of fir)av.oz. 2..gr. 80
Oil of sassafras.....fl.dr. 4
Alcohol, to make.....fl.oz. 16

Introduce the guaiac and the turpentine into a flask, together with 12 fluidounces of alcohol, cork the flask loosely, and heat the contents, on a water bath, slowly to boiling. Then cool the flask, and filter the contents through a small filter. Dissolve the mercuric chlorid in 4 fluidrams of alcohol, and add this solution, as well as the oil, to the filtrate. Lastly, pass enough alcohol through the

filter to make the product measure 16 fluidounces.

Each fluidram contains nearly $\frac{1}{3}$ gr. of mercuric chlorid.

The dose of this preparation is about 10 to 20 minims.—N. F.

Tincture, Antihysterie. (Antihysterie Drops.)

Tincture of asafetida.....	f.oz. 4
Tincture of valerian.....	f.oz. 2
Tincture of castor (Candian)	f.oz. 2
Tincture of opium.....	f.dr. 6½

—H.

Tincture, Antiperiodic. (Warburg's Tincture—Tincture Antifebrilis.)

1. Without aloes.

Rhubarb	gr. 58
Angelica seed	gr. 58
Elecampane	gr. 29
Spanish saffron	gr. 29
Fennel	gr. 29
Prepared chalk	gr. 29
Gentian	gr. 15
Zedoary	gr. 15
Cubeb	gr. 15
Myrrh	gr. 15
Camphor	gr. 15
White agaric	gr. 15
Opium	gr. 2
Black pepper	gr. 3
Cinnamon	gr. 6
Ginger	gr. 6
Quinine sulfate	gr. 145
Alcohol, distilled water, each, to make	f.oz. 16

Reduce all the drugs, with the exception of the quinine, to a moderately coarse (No. 30) powder, and digest the powder with 14 fluidounces of a menstruum composed of 3 volumes of alcohol and 2 of water, in a glass flask provided with an upright condenser, on a water bath, at a temperature not higher than 150 deg. C. during 12 hours, carefully avoiding loss of alcohol by vaporization. After cooling, strain the liquid by expression, and wash the residue with enough of the same menstruum, again expressing, to make 16 fluidounces of liquid. In this dissolve the quinine sulfate, by the aid of a gentle heat, if necessary. Then filter the tincture through paper.—N. F.

Each fluidounce contains 9 gr. of quinine sulfate.

2. With aloes.

Extract of aloes, U. S. P....	gr. 32
Antiperiodic tincture, without aloes	f.oz. 4

Dissolve the extract in the tincture.

Each fluidounce contains 8 gr. of extract of aloes, equal to about 15½ gr. of aloes.

This preparation (containing aloes) is to be dispensed when "Warburg's Tincture," without further specification, is ordered.

Dosage.—This depends on the kind of tincture used, whether with aloes or without, and the intended purpose, and varies from 1 to 4 fluidrams. The larger quantity is given when Dr. Warburg's original directions are followed for administering the remedy in remittent fevers, which were as follows: One-half ounce to be given without dilution, after the bowels have been evacuated by any convenient purgative, all drink being withheld. After 3 hours, another half ounce is to be given.

The original formula directed by Dr. Warburg contained the old Confectio Damocratis as one of the ingredients. This is a very complex preparation, many of the constituents of which are unobtainable at the present day.

The formula of the Brit. Form. is almost the same as that of the N. F., No. 1.

Tincture of Arbor Vitæ. (Tincture of Thuja.)

Fresh drug (leaves and twigs), containing solids..	gr. 730
(plant moisture, av.oz. 2¼)	
Alcohol	f.oz. 14¾

—Homeopathic.

This is intended to make 16 fluidounces. See Tinctures, Homeopathic, for method of preparation.

This is a 1x tincture, from which dilutions are to be made with dispensing alcohol. See Dilutions, Homeopathic.

Tincture of Arnica. (Tincture of Leopard's Bone.)

Tincture of arnica of the U. S. P. is tincture of the flowers; the tincture of arnica of the Brit. Pharm. is tincture of

arnica root, which see; the tincture of arnica of the Eclectics and Germ. Pharm. is tincture of arnica flowers; see Tincture of Arnica.

Tincture of Arnica. (Tincture of Arnica Flowers.)

I.

Arnica flowers, No. 20 powderav.oz. 6¾
Diluted alcohol, to make...fl.oz. 32

Macerate the drug with 16 fluidounces of diluted alcohol in a closed vessel, in a moderately warm place, for 3 days, with occasional stirring, and express strongly. Repeat this operation twice successively with 8 fluidounces of diluted alcohol, macerating 24 hours each time; then having ascertained the volume of the united expressed liquids, macerate the residual marc for 6 hours with enough menstruum to make approximately 32 fluidounces, and express as before. Mix the expressed liquids, filter through paper, and pass enough diluted alcohol through the filter to make 32 fluidounces of filtrate.—U. S. P.

The drug may be expressed conveniently by means of a tincture press.

II.

Arnica flowersav.oz. 2
Diluted alcohol, to make...fl.oz. 16

Prepare by percolation or maceration.

III.

Arnica flowersav.oz. 1½
Waterfl.oz. 3½
Alcoholfl.oz. 13

Mix, macerate for 7 days, agitating occasionally, strain with expression and filter.—Germ. Pharm.

Tincture of Arnica Root. (Tincture of Arnica, Brit. Pharm.)

I.

Arnica root, No. 40 powder.gr. 720
Alcohol, water, each, to
makefl.oz. 16

Mix the alcohol and water in the proportion of 13 volumes of the former to 7 of the latter. Moisten the drug with 2½ fluidounces of menstruum, macerate for 24 hours, pack firmly in a cylindrical percolator, and gradually pour on

the above menstruum until 16 fluidounces of percolate are obtained.—N. F. Appendix and U. S. P. 1890.

II.

Arnica root, No. 40 powder...gr. 365
Alcohol, water, each, to
makefl.oz. 16

Extract the drug with a mixture of 3 volumes of alcohol and 1 of water.—Brit. Pharm.

Tincture, Aromatic.

I.

Cinnamon (Cassia)gr. 640
Gingergr. 260
Galangal rootgr. 130
Clovegr. 130
Cardamomgr. 130
Alcohol, water, each, to
makefl.oz. 16

Reduce the drugs to a moderately coarse (No. 40) powder, and percolate it, in the usual manner, with a mixture of 2 volumes of alcohol and 1 of water, until 16 fluidounces of percolate are obtained.

This preparation is almost identical with that which is official in the Germ. Pharm.—N. F.

For a slight modification of the above, see Syrup of Yerba Santa, Aromatic, No. IV.

II.

Cassia cinnamon, coarse
powderav.oz. 1½
Ginger, cut moderately fine...gr. 260
Galanga, cut moderately fine.gr. 130
Clove, cut moderately fine...gr. 130
Cardamom, bruisedgr. 130
Alcoholav.oz. 11¼
Waterav.oz. 3¾

Mix, macerate for 7 days, agitating occasionally, express and filter.—Germ. Pharm.

Tincture of Asafetida.

I.

Asafetida, well bruised...av.oz. ¾
Alcohol, to make.....fl.oz. 16

Macerate the drug with 12 fluidounces of alcohol, in a stoppered container in a warm place, for 3 days, agitating frequently, then filter through absorbent cotton or a plain paper filter, and when the liquid has drained off completely,

pass enough alcohol through the residue in the filter to make 16 fluidounces of filtrate.

The drug used must not be the commercial powder, but should be the whole gum reduced to coarse powder by contusion.

The only practical difference between this preparation and that of the Brit. Pharm. is that in the latter the drug is extracted with a mixture of 3 volumes of alcohol and 1 of water.

II.

Asafetida, coarse powder..av.oz. $2\frac{3}{4}$
Alcoholfl.oz. 16

Mix, macerate for 7 days, agitating occasionally, and filter.—Dan., Swed., and Norw. Pharms.

III. Homeopathic:

This is one-half the strength of the U. S. P. preparation and may be made from the latter by adding to it an equal volume of alcohol. This makes a 1x tincture. Dilutions may be made from this by adding dispensing alcohol. See Dilutions, Homeopathic.

Tincture of Asafetida, Compound.

Asafetidagr. 180
Lupulingr. 180
Stramonium seedgr. 180
Valerian rootgr. 180
Alcoholfl.oz. 20

Mix the drugs, reduce to coarse powder, add the alcohol, macerate for 14 days, strain, express and filter.—Eclectic.

Tincture, Asiatic.

Opiumav.oz. 1
Camphorav.oz. 1
Capsicum, powderav.oz. 1
Oil of clove.....fl.oz. 1
Hoffmann's anodynefl.oz. 16

Mix, macerate for 10 to 20 days, and filter or decant the clear liquid.

This is used for cholera, the dose being 20 to 60 drops every 2, 3 or 4 hours in sweetened water.

Tincture of Asparagus.

Fresh drug (the young shoots), containing solids..gr. 730
(plant moisture, av.oz. $6\frac{2}{3}$)
Alcoholfl.oz. $10\frac{1}{4}$
—Homeopathic.

This is intended to make 16 fluidounces. It is a 1x tincture. See Tincture, Homeopathic, for method of preparation.

Dilutions: 2x is to be made from 1 volume of tincture, 3 of distilled water, and 6 of alcohol; 3x and higher are made with dispensing alcohol. See Dilutions, Homeopathic.

Tincture of Avena Sativa. (Tincture of Oat.)

I.

Fresh drug (seed) containing solidsgr. 730
(plant moisture, av.oz. 3.9)
Distilled waterfl.oz. $2\frac{3}{4}$
Alcoholfl.oz. $10\frac{1}{4}$
—Homeopathic.

This is intended to make 16 fluidounces. It makes a 1x tincture. See Tinctures, Homeopathic, for method of preparation.

Dilutions: 2x are to be made from 1 volume of tincture, 3 of distilled water, and 6 of alcohol; 3x and higher are to be made with dispensing alcohol. See Dilutions, Homeopathic.

II. An Eclectic formula is to prepare a strong tincture by crushing the entire plant when the grain is "in the milk," covering with alcohol, macerating 14 days, expressing, and filtering.

Tincture of (Honey) Bee. (Tincture of Apis mellifica.)

I.

Bees, containing solids.....gr. 730
(moisture, av.oz. $2\frac{1}{2}$)
Glycerinfl.oz. $3\frac{3}{4}$
Distilled waterfl.oz. $3\frac{3}{4}$
Alcoholfl.oz. 7
—Homeopathic.

This is intended to make 16 fluidounces.

In preparing the tincture, the requisite amount of live bees should be put into a clean, wide-mouthed bottle; after irritating them by shaking, the menstruum should be poured in, and the whole allowed to macerate for 10 days, agitating twice daily. The resulting tincture should be poured off and filtered. The bees should not be pressed, as only the contents of the poison sac is desired,

but the tincture takes up in solution much of the animal fluids, besides honey from the abdomen and pollen adhering to the antennæ. The drug strength of the tincture varies, depending on the season of the year when the bees are secured. When they are dormant, their poison is supposed to be less virulent.

Dilutions: 2x is to contain 1 volume of tincture, 4 of distilled water, and 5 of alcohol; 3x and higher are to be made with dispensing alcohol. See Dilutions, Homeopathic.

II. The Eclectic formula is slightly different from the preceding and is as follows:

Collect a quantity of living honey-bees in a bottle, agitate the latter so as to irritate them and then cover them with alcohol; after a few days, the liquid is ready for use.

Tincture of Belladonna.

The tincture of belladonna of the U. S. P. is derived from the leaves, while that of the Brit. Pharm. is derived from the root and is prepared as follows:

Fluid extract of belladonna
root, Brit. Pharm. fl.oz. 1
Alcohol fl.oz. 9½
Water fl.oz. 5½
Mix, set aside for 24 hours, and filter.

See also Tincture of Belladonna Leaves.

Tincture of Belladonna Leaves.

Belladonna leaves, No. 60
powder (containing not less
than 0.35 per cent. of al-
kaloids) av.oz. 1¾
Diluted alcohol, to make... fl.oz. 16

Moisten the drug with 5 fluidrams of diluted alcohol, transfer it to a percolator, and without pressing the drug, allow it to stand, well covered, for 3 hours; then pack it firmly and pour on enough diluted alcohol to saturate the drug and leave a stratum above it. When the liquid begins to drop from the percolator, close the lower orifice, and, having closely covered the percolator, macerate for 24 hours. Then allow percolation to proceed slowly, gradually pour-

ing on diluted alcohol, until 16 fluidounces of percolate are obtained.

Tincture of belladonna leaves, when assayed, should contain 0.035 gm. of alkaloids in 100 cc.—U. S. P.

Tincture of Benzoin. (Simple Tincture of Benzoin.)

I.

Benzoin, No. 40 powder....av.oz. ¾
Alcohol, to make.....fl.oz. 16

Triturate the drug with 4 fluidounces of alcohol until a uniform magma is obtained. Transfer this to a stoppered container with the aid of 8 fluidounces of alcohol, and set it aside in a moderately warm place, agitating frequently, for 3 days. Then transfer the mixture to a filter paper, and, when the liquid has drained off completely, pour on the residue alcohol enough to make 16 fluidounces of filtrate.—U. S. P.

The benzoin used should not be the ordinary, commercial powder, but should be a good quality of whole gum reduced to powder by contusion.

II.

Benzoin, powdergr. 730
Alcohol, to make.....fl.oz. 16

Macerate the benzoin with 13 fluidounces of alcohol for 24 hours, agitating frequently, then filter and add alcohol through the filter to make the process measure 16 fluidounces.—Brit. Form.

III.

Siam benzoin, coarse powd.av.oz. 2½
Alcoholfl.oz. 14½

Mix, macerate for 7 days, agitating occasionally, and filter.—Germ. and Austr. Pharms.

Tincture of Benzoin, Comp. (Friar's, Turlington's, Wade's, Persian, Swedish, or Commander's Balsam—Traumatic Elixir or Balsam—Balsamic Tincture—Jesuit's Drops.)

I.

Benzoinav.oz. 2½
Storaxav.oz. 2
Tolu balsamav.oz. 1
Purified aloesav.oz. ½
Alcohol, to make.....fl.oz. 24

Triturate the benzoin and aloes with 6 fluidounces of alcohol until a uniform

magma is obtained. Transfer this to a stoppered container with the aid of 12 fluidounces of alcohol, add the storax and balsam, and set the mixture aside in a moderately warm place, shaking frequently, for 3 days; then transfer it to a paper filter, and when the liquid has drained off completely, pour on enough alcohol to make 24 fluidounces of filtrate.

—U. S. P.

See also Balsam, Friar's.

II.

Benzoin, coarse powder.....gr.	730
Prepared storax	av.oz. 1¼
Tolu balsam	gr. 185
Socotrine aloes	gr. 135
Alcohol, to make.....	fl.oz. 16

Macerate the drugs with 13 fluidounces of alcohol for 2 days, agitating frequently, filter, and pass enough alcohol through the filter to make the filtrate measure 16 fluidounces.—Brit. Pharm.

Tincture of Benzoin, Concentrated.

This is the same as Extract, Fluid, of Benzoin.

Tincture of Birch Tar.

Hebra's (in D. and H.):

Oil of lavender flowers.....	part 1
Oil of rue	part 1
Oil of rosemary	part 1
Rectified birch tar.....	parts 25
Stronger ether	parts 36
Alcohol	parts 36

All parts are by weight.

Tincture, Bitter. (Tinctura Amara—Stomachic Tincture—Bitter Stomachic Drops—Stomach Drops—Magen Tropfen—Bittere Magen Tropfen.)

I.

Gentian	av.oz. 2½
European centaury herb.....	av.oz. 2½
Bitter orange peel.....	av.oz. 1¾
Orange berries	gr. 384
Zedoary root	gr. 384
Alcohol, water, each, to make	fl.oz. 48

Reduce the drugs to moderately coarse powder and percolate it in the usual manner with a mixture of 2 volumes of alcohol and 1 of water until 48 fluidounces of percolate are obtained.—N. F.

This makes a preparation practically identical with that of the Germ. Pharm.

II.

Gentian, cut moderately

fine

av.oz.	3
--------	---

European centaury, cut moderately fine

av.oz.	3
--------	---

Bitter orange peel, cut moderately fine

av.oz.	2
--------	---

Orange berries, coarse powder

av.oz.	1
--------	---

Zedoary, cut moderately fine

av.oz.	1
--------	---

Water

av.oz.	12½
--------	-----

Alcohol

av.oz.	37½
--------	-----

Mix, macerate for 7 days, agitating occasionally, strain with expression, and filter.—Germ. Pharm.

III.

Buckbean leaves

av.oz.	½
--------	---

European centaury

av.oz.	½
--------	---

Gentian

av.oz.	½
--------	---

Bitter orange peel.....

av.oz.	½
--------	---

Sodium carbonate, crystal.....

av.oz.	¼
--------	---

Cinnamon water, spirituous

(Germ. Pharm. or No.

III)

av.oz.	25
--------	----

Digest for 3 days, agitating occasionally, express and filter.—Austr. Pharm.

IV. The preparations of the Norw. and Dan. Pharms. differ from the above mainly in containing wormwood. The Norwegian preparation is as follows:

Anise	gr. 65
Orange berries	gr. 200
Buckbean	gr. 200
Gentian	gr. 200
Wormwood	av.oz. 1½
Water	fl.oz. 4
Alcohol	fl.oz. 12½

Reduce the drugs to coarse powder, macerate in the mixed alcohol and water for 7 days, agitating occasionally; then express and filter.

The Danish preparation is as follows:

Anise	gr. 45
Orange berries	gr. 165
Blessed thistle	gr. 165
Gentian root	gr. 165
Wormwood	av.oz. 1½
Water	fl.oz. 4
Alcohol	fl.oz. 12½

Prepare like the preceding.

These two preparations are called "bitre draaber" and are akin to the compound tincture of wormwood of the Swed. Pharm. See Tincture of Wormwood, Compound.

Tincture of Black Cohosh. (Tincture of Cimicifuga or Actæa Racemosa.)

Black cohosh, No. 40 powd. av. oz. $3\frac{1}{4}$
 Alcohol, to make..... fl. oz. 16

Moisten the drug with 1 fluidounce of alcohol, transfer it to a percolator, and without pressing the drug, allow it to stand, well covered, for 6 hours; then pack it firmly and pour on enough menstruum to saturate the drug and leave a stratum above it. When the liquid begins to drop from the percolator, close the lower orifice, and having closely covered the percolator, macerate for 24 hours. Then allow percolation to proceed slowly, pouring on enough alcohol to make 16 fluidounces of percolate.—U. S. P.

The preparation of the Brit. Pharm. is one-half the strength of that of the U. S. P. The menstruum is also alcohol.

Tincture of Black Cohosh, Comp'd. (Compound Tincture of Cimicifuga.)

Tincture of blackcohosh..... fl. oz. 5
 Tincture of blood root..... fl. oz. $2\frac{1}{2}$
 Tincture of poke..... fl. oz. 1
 —Eclectic.

The Eclectic tinctures are intended for this mixture.

This mixture may be extemporized if desired by mixing

Fluid extract of black cohosh..... fl. oz. 1
 Fluid extract of blood root..... fl. dr. 4
 Fluid extract of poke root..... fl. dr. 2
 Diluted alcohol, to make..... fl. oz. 8

Tincture of Bloodroot. (Tincture of Sanguinaria.)

I.

Bloodroot, No. 60 powder. av. oz. $1\frac{3}{4}$
 Acetic acid, 36 p. c..... fl. dr. $2\frac{1}{2}$
 Alcohol, water, each, to
 make..... fl. oz. 16

Mix the alcohol and water in the proportion of 3 volumes of the former to 2 of the latter. Moisten the drug with the acetic acid previously mixed with 4 fluidrams of this menstruum, transfer it to a percolator, and without pressing the drug, allow it to stand, well covered, for 6 hours; then pack it firmly and

pour on enough menstruum to saturate the drug and leave a stratum above it. When the liquid begins to drop from the percolator, close the lower orifice, and, having closely covered the percolator, macerate for 24 hours. Then allow percolation to proceed slowly, pouring on enough menstruum to make 16 fluidounces of percolate.—U. S. P.

II.

Fresh drug (root), containing solids..... gr. 730
 (plant moisture.. av. oz. 5)
 Distilled water..... fl. dr. 13
 Alcohol..... fl. oz. $10\frac{1}{4}$
 —Homeopathic.

This is intended to make 16 fluidounces. See Tinctures, Homeopathic, for method of preparation.

This makes a 1x tincture. Dilutions: 2x are to be made from 1 volume of tincture, 3 of distilled water, and 6 of alcohol; 3x and higher are to be made with dispensing alcohol. See Dilutions, Homeopathic.

Tincture of Bloodroot, Compound. (Emetic Tincture.)

Bloodroot..... av. oz. 1
 Lobelia herb..... av. oz. 1
 Skunk cabbage..... av. oz. 1
 Diluted alcohol to make... fl. oz. 16

Extract the mixed drugs in fine powder by percolation or maceration.—Eclectic.

See also next formula.

Tincture of Bloodroot, Comp'd Acetated. (Acetous Emetic Tincture.)

Bloodroot..... av. oz. 1
 Lobelia herb..... av. oz. 1
 Skunk cabbage..... av. oz. 1
 Alcohol..... fl. oz. 1
 Diluted acetic acid..... sufficient

Reduce the drugs to moderately fine powder, extract by percolation or maceration with the acid so as to obtain 16 fluidounces of percolate, and to the latter add the alcohol.—Eclectic.

See preceding formula.

Tincture of Blue Cohosh. (Tincture of Caulophyllum.)

Blue cohosh, fine powder.. av. oz. 3
 Alcohol..... fl. oz. 16

Macerate for 14 days and strain.—Eclectic.

Tincture of Blue Cohosh, Compound.

Blue cohosh, fine powder....gr. 580
 Ergot, fine powder.....gr. 290
 Water pepper, fine powder..gr. 290
 Oil of savin.....m. 160
 Alcohol, to make.....fl.oz. 16

Extract the mixed drugs by percolation or maceration with alcohol, so that the percolate with the oil added will make 16 fluidounces.—Eclectic.

Tincture of Blue Flag. (Tincture of Iris—Tinctura Iridis.)

Blue flag, fine powder....av.oz. 1½
 Alcohol, to make.....fl.oz. 16

Extract the drug by percolation or maceration.—Eclectic.

Tincture of Bryony.

I.

Bryony, recently dried, and
 in No. 40 powder.....gr. 720
 Alcohol, to make.....fl.oz. 16

Moisten the powder with 1½ fluidounces of alcohol, macerate for 24 hours, pack firmly in a cylindrical percolator, and gradually add alcohol until 16 fluidounces of percolate are obtained.—N. F. Appendix and U. S. P. 1890.

II.

Bryony root, fresh,
 Alcohol,
 Distilled water, each.....sufficient

Ascertain the percentage of moisture in the root by drying 100 grains of it over a water bath. Bruise the remainder, after having calculated the moisture it contains, and reckon this moisture as part of the water to form, with alcohol, a mixture equal in strength to 60 per cent. (by measure) of alcohol. Produce a tincture by macerating for 7 days of such strength so that 9½ fluidounces shall represent 1 av.ounce of dried root. Add more diluted alcohol to the mixture of moist drug and alcohol to make the requisite quantity of finished tincture.—Brit. Form.

Tincture of Buchu. (Tincture of Barosma.)

I.

Buchu, No. 20 powder.....av.oz. 3¼
 Alcohol, water, each.....sufficient

Mix 2 volumes of alcohol with 1 of water, moisten the drug with 3¼ fluidounces of this menstruum, and then ex-

tract by percolation in the usual manner so as to obtain 16 fluidounces of product.—Brit. Pharm.

II.

Dried leavesgr. 730
 Distilled waterfl.oz. 3¼
 Alcoholfl.oz. 13¼
 —Homeopathic.

This is intended to make 16 fluidounces. This is a 1x tincture. See Tinctures, Homeopathic, for method of preparation.

This tincture is one-half the strength of that of the Brit. Pharm.

Dilutions are to be made with dispensing alcohol. See Dilutions, Homeopathic.

Tincture of Buckthorn. (Tincture of Frangula.)

Dry drug (bark of young
 branches, gathered in
 spring and kept at least
 one year).....gr. 730
 Distilled waterfl.oz. 3¼
 Alcoholfl.oz. 13¼
 —Homeopathic.

This is intended to make 16 fl.oz. See Tinctures, Homeopathic, for method of preparation.

This makes a 1x tincture, from which dilutions are to be made with dispensing alcohol. See Dilutions, Homeopathic.

Tincture of Cacao. (Tincture of Theobroma.)

Cacao beans, freshly
 roastedav.oz. 16
 Cinnamonav.oz. 2
 Tincture of vanilla, U. S. P. fl.oz. 2½
 Diluted alcohol, to make...fl.oz. 16

Reduce the cacao beans and the cinnamon to moderately fine powder, add 16 fluidounces of diluted alcohol, macerate for 4 or 5 days, agitating occasionally, transfer to a glass percolator and percolate, adding sufficient more of the diluted alcohol to make the percolate, including the tincture of vanilla, measure 16 fluidounces.

This is used as a flavor in some elixirs and otherwise.

Tincture of Cactus Grandiflorus. (Tincture of Cereus Grandiflorus—Tinctura Cacti—Tincture of Cactus.)

I. There is no tincture of this kind

recognized by the U. S. P., N. F. or Brit. Pharm. It is frequently prepared by diluting the fluid extract (which see), which is already in reality a tincture, with 3 times its volume of diluted alcohol.

II.

Cactus grandiflorus, fresh
flowers and stems, cut
into small pieces.....av.oz. 4½
Alcoholfl.oz. 16

Macerate for 14 days, occasionally agitating, express and filter.—Eclectic.

III.

Fresh drug (flowers and
young twigs).....gr. 730
(plant moisture.....av.oz. 9½)
Alcoholfl.oz. 7½
—Homeopathic.

This is intended to make 16 fluid-ounces. It is a 1x tincture. See Tinctures, Homeopathic, for method of preparation.

Dilutions: 2x is to be made from 1 volume of tincture, 4 of distilled water, and 5 of alcohol; 3x and higher are to be made with dispensing alcohol. See Dilutions, Homeopathic.

Tincture of Calabar Bean.

I.

Calabar bean, No. 50 powder (containing 0.15 per cent of ether-soluble alkaloids)av.oz. 1¾
Alcohol, to make.....fl.oz. 16

Moisten the drug with 5 fluidrams of alcohol, transfer it to a percolator, and without pressing the powder, allow it to stand, well covered, for 6 hours; then pack it firmly and pour on enough alcohol to saturate the drug and leave a stratum above it. When the liquid begins to drop from the percolator, close the lower orifice, and having closely covered the percolator, macerate for 24 hours. Then allow percolation to proceed slowly, pouring on enough alcohol to make 16 fluidounces of percolate.—U. S. P.

The product, when assayed, should contain 0.014 gm. of ether-soluble alkaloids in 100 cc.

The preparation of the Brit. Form. is

one-half the strength of the above. The menstruum is alcohol.

II.

Dry druggr. 730
Alcohol, to make.....fl.oz. 16
—Homeopathic.

This is somewhat weaker than the U. S. P. tincture and may be prepared from the latter by mixing 2 volumes of it with 1 of alcohol. This makes a 1x tincture. Dilutions are to be made from this with dispensing alcohol. See Dilutions, Homeopathic.

Tincture of Calamus. (Tincture of Sweet Flag.)

Calamus, cut moderately
coarseav.oz. 4
Waterav.oz. 5 or fl.oz. 4¾
Alcoholav.oz. 15 or fl.oz. 17¼

Mix, macerate for 7 days, agitating occasionally, strain with expression and filter.—Germ. Pharm.

Tincture of Calendula. (Tincture of Marigold Flowers.)

Calendula (flowers), No. 20
powderav.oz. 3¾
Alcohol, to make.....fl.oz. 16

Moisten the drug with 10 fluidrams of alcohol, transfer it to a percolator, and without pressing the drug, allow it to stand, well covered, for 6 hours; then pack it very firmly and pour on enough alcohol to saturate the drug and leave a stratum above it. When the liquid begins to drop from the percolator, close the lower orifice, and, having closely covered the percolator, macerate for 24 hours. Then allow percolation to proceed slowly, pouring on enough alcohol to make 16 fluidounces of tincture.—U. S. P.

The preparation of the Brit. Form. differs from this only in being made with 60 per cent. alcohol as the menstruum.

Tincture of Camphor.

The Homeopathic tincture is the same as the U. S. P. spirit of camphor, which see.

This is a 1x preparation, from which dilutions are made with dispensing alcohol. See Dilutions, Homeopathic.

Tincture of Camphor, Saturated.
(Rubini's Camphor.)

This Homeopathic preparation is saturated solution of camphor in alcohol containing about one-half camphor.

Tincture of Cannabis Indica. (Tincture of Indian Cannabis or of Indian Hemp or of Black Indian Hemp.)

I.

Cannabis indica, No. 40
powderav.oz. 1¾
Alcohol, to make.....fl.oz. 16

Moisten the drug with 6 fluidrams of alcohol, transfer it to a percolator, and, without pressing the drug, allow it to stand well covered for 6 hours; then pack it very firmly and pour on enough alcohol to saturate drug and leave a stratum above it. When the liquid begins to drop from the percolator, close the lower orifice, and, having closely covered the percolator, macerate for 24 hours. Then allow percolation to proceed slowly, pouring on enough alcohol to make 16 fluidounces of percolate.—U. S. P.

II.

Extract of cannabis indica,
Brit. Pharm.gr. 92
Alcohol, to make.....fl.oz. 4

Dissolve the extract in 3½ fluidounces of alcohol, filter if necessary, and add the remainder of the alcohol.—Brit. Pharm.

III.

Extract of cannabis indica....gr. 80
Alcoholfl.oz. 4
—Germ. Pharm. (2nd).

IV.

Alcoholic extractgr. 23
Alcoholfl.oz. 4
—Homeopathic.

The extract is to represent 8 times its weight of crude drug. This preparation may be more conveniently made by mixing 1 volume of fluid extract of cannabis indica with 9 volumes of alcohol.

This makes a 1x tincture, from which dilutions are to be made by the addition of dispensing alcohol. See Dilutions, Homeopathic.

Tincture of Cantharides. (Tincture of Spanish Fly.)

I.

Cantharides, No. 60 powderav.oz. 1¾
Alcohol, to make.....fl.oz. 16

Moisten the drug with 4 fluidrams of alcohol, transfer it to a percolator, and without pressing the powder, allow it to stand, well covered, for 6 hours; then pack it very firmly and pour on alcohol enough to saturate the powder and leave a stratum above it. When the liquid begins to drop from the percolator, close the lower orifice, and, having closely covered the percolator, macerate for 24 hours. Then allow percolation to proceed slowly, pouring on enough alcohol to make 16 fluidounces of percolate.—U. S. P.

This preparation is twice the strength of that of the U. S. P. 1890.

II.

Cantharides, No. 40 powder..gr. 92
Alcoholfl.oz. 16

Extract the drug by the maceration process.—Brit. Pharm.

The U. S. P. preparation is 8 times the strength of that of the Brit. Pharm.

III.

Cantharides, No. 20 powder.gr. 610
Alcoholfl.oz. 16

Mix, macerate for 7 days, agitating occasionally, strain with expression and filter.—Germ. Pharm.

IV.

Cantharis, fine powder.....gr. 730
Alcohol, to make.....fl.oz. 16
—Homeopathic.

See Tinctures, Homeopathic.

This is about the strength of the U. S. P. preparation. It forms a 1x tincture, from which dilutions are made by addition of dispensing alcohol. See Dilutions, Homeopathic.

Tincture of Capsicum. (Tincture of Cayenne Pepper.)

I.

Capsicum, No. 50 powder.av.oz. 1¾
Alcohol, water, each, to
makefl.oz. 16

Mix the alcohol and water in the proportion of 19 volumes of the former to

1 of the latter. Moisten the durg with 4 fluidrams of menstruum, transfer it to a percolator, and without pressing the powder, allow it to stand, well covered, for 6 hours; then pack it firmly and pour on enough menstruum to saturate the drug and leave a stratum above it. When the liquid begins to drop from the percolator, close the lower orifice, and having closely covered the percolator, macerate for 24 hours. Then allow percolation to proceed slowly, pouring on enough menstruum to make 16 fluid-ounces of percolate.—U. S. P.

This preparation is twice the strength of that of the U. S. P. 1890.

II.

Capsicum, No. 20 powder...gr. 365
Waterfl.oz. 4¼
Alcoholfl.oz. 11¾

Mix, macerate for 7 days, agitating occasionally, strain with expression, and filter.—Brit. Pharm.

III.

Capsicum, cut moderately
finegr. 730
Waterfl.oz. 4
Alcoholfl.oz. 14½

Mix, macerate for 7 days, agitating occasionally, strain with expression, and filter.—Germ. Pharm.

IV.

Capsicum, powder.....gr. 730
Distilled waterfl.dr. 6½
Alcoholfl.oz. 15½
—Homeopathic.

This is intended to make 16 fluid-ounces. See Tinctures, Homeopathic, for method of preparation.

This makes a 1x tincture (same as the U. S. P.) from which dilutions are made by the addition of dispensing alcohol. See Dilutions, Homeopathic.

Tincture of Capsicum and Myrrh.
(Hot Drops—Rheumatic Drops—
"Number Six.")

Capsicum, No. 20 powder...gr. 240
Myrrh, moderately coarse
powderav.oz. 2, gr. 85
Water, alcohol, each, to
makefl.oz. 16
Mix the powders with an equal bulk

of clean, fine sand, and percolate, in the usual manner, with a mixture of 9 volumes of alcohol and 1 of water until 16 fluidounces of percolate are obtained.

—N. F.

This preparation is sometimes extemporized by mixing equal parts of tinctures of capsicum and of myrrh, but such a mixture has only 80 per cent. of each of the ingredients as given in the above regular formula.

This was originally a Thomsonian preparation. Thomson (in Guide and the Materia Medica) generally used 1 ounce of capsicum and 1 pound of myrrh to 1 gallon of high wines, fourth-proof brandy or other strong spirit. Other substances were sometimes added, such as bayberry, golden seal, camphor, oil of turpentine, etc. For rheumatism, itch, etc., one-fourth part of oil of turpentine was to be added; for sprains and bruises, a small amount of gum camphor was to be added.

For an eclectic variation of the above preparation, see Tincture of Myrrh, Compound.

Tincture of Capsicum, Stronger or Concentrated.

Capsicum, No. 40 powder...av.oz. 5½
Alcohol, enough to make...fl.oz. 16

Prepare the tincture by slow percolation.—Brit. Form.

Tincture of Cardamom.

Cardamom, No. 30 powder.av.oz. 3¼
Diluted alcohol, to make....fl.oz. 16

Prepare like tincture of calendula using diluted alcohol as the menstruum.—U. S. P.

This preparation is twice the strength of that of the U. S. P. 1890.

Tincture of Cardamom, Compound.

I.

Cardamomav.oz. 1¼
Saigon cinnamonav.oz. 1¼
Carawaygr. 260
Cochinealgr. 110
Glycerinfl.oz. 2½
Diluted alcohol, to make..fl.oz. 48

Mix the glycerin with 45½ fluidounces of diluted alcohol. Reduce the four drugs to No. 40 powder, and macerate

this in a stoppered container, in a moderately warm place, with 36 fluidounces of menstruum during 7 days, agitating occasionally; then filter through absorbent cotton or a plain paper filter, and when the liquid has drained off completely, pour on the residue, first, the remainder of the mixed liquid, and then, enough diluted alcohol to make 48 fluidounces of percolate.—U. S. P.

II.

Cardamom, bruised	gr. 92
Caraway, bruised	gr. 92
Ceylon cinnamon, bruised...	gr. 185
Raisins, freed from seeds...	gr. 730
Cochineal, powder	gr. 46
Water	fl.oz. 5¾
Alcohol	fl.oz. 10¾

Mix, macerate for 7 days, agitating occasionally, strain with expression and filter.—Brit. Pharm.

Tincture, Carminative.

Cardamom seed, bruised...	gr. 500
Tincture of ginger, U. S. P.	fl.oz. 2½
Oil of cinnamon.....	m. 80
Oil of clove.....	m. 80
Oil of caraway.....	m. 80
Alcohol, to make.....	fl.oz. 16

Macerate the cardamom with 12 fluidounces of alcohol for 7 days, decant the liquid, express the residue, filter the entire liquid, add the oils to the filtrate, and finally add the remainder of the alcohol.—Brit. Form.

Tincture of Casca. (Tincture of Erythrophlœum.)

Casca bark (Erythrophlœum guineense	gr. 730
Alcohol, to make.....	fl.oz. 16

Prepare the tincture by percolation.—Brit. Form. (2nd edition).

Tincture of Cascara Sagrada.

Dry drug (bark, at least 2 years old)	gr. 730
Distilled water	fl.oz. 6½
Alcohol	fl.oz. 10½

—Homeopathic.

This is intended to make 16 fluidounces. See Tinctures, Homeopathic, for method of preparation.

This is a 1x tincture. Dilutions: 2x is made from 1 volume of tincture, 3 of distilled water, and 6 of alcohol; 3x and

higher are to be made with dispensing alcohol. See Dilutions, Homeopathic.

Tincture of Cascarilla.

Cascarilla, No. 40 powder..	av.oz. 3¼
Alcohol, water, each to make	fl.oz. 16

Use a mixture of 3 volumes of alcohol and 1 of water as a menstruum, moisten the drug with 2½ fluidounces of this menstruum, and extract by percolation in the usual manner to obtain 16 fluidounces of percolate.—Brit. Pharm.

Tincture of Castor.

I.

Castor (Russian preferred) ..	gr. 600
Alcohol, to make.....	fl.oz. 16

Reduce the castor to as fine a condition as possible, macerate with the alcohol for 14 days, occasionally agitating, express, and filter, adding enough alcohol through the filter to make the liquid measure 16 fluidounces.—Eclectic.

II.

Castor, coarse powder....	av.oz. 2¾
Alcohol	fl.oz. 16

Mix, macerate for 7 days, agitating occasionally, and filter.—Dan. Swed. and Norw. Pharms.

III.

Drug	gr. 182
Alcohol	fl.oz. 4

To make 4 fluidounces of tincture. See Tinctures, Homeopathic. This is a 1x tincture.—Homeopathic.

Dilutions are to be made from this by addition of dispensing alcohol.

IV. The Germ. Pharm. (1st edition) recognized two preparations, one from Canadian and one from Russian castor, the preparations being otherwise identical.

Castor	gr. 610
Alcohol	fl.oz. 16

Reduce the drug to very fine condition and extract by maceration with the alcohol.

Tincture of Castor, Ammoniated.

Castor	av.oz. 1
Asafetida	gr. 240
Spirit of ammonia.....	fl.oz. 16

Macerate in a close vessel for 7 days,

agitating occasionally, express forcibly, and filter.—Eclectic.

Tincture of Castor, Thebaic. (Tincture of Castor with Opium.)

Opium	gr. 73
Ammonium carbonate	gr. 210
Asafetida	av.oz. 1
Castor, Canadian	av.oz. 2
Dippel's animal oil	gr. 7
Water	fl.oz. 4 $\frac{3}{4}$
Alcohol	fl.oz. 13 $\frac{1}{2}$

Reduce the solids to coarse powder, mix all, macerate for 7 days, agitating occasionally, and filter.—Swed. Pharm.

Tincture of Catechu.

See Tincture of Catechu, Compound.

Tincture of Catechu, Comp'd. (Tincture of Catechu U. S. P. 1870, and Brit. and Germ. Pharms.)

I.

Catechu, No. 40 powder	gr. 730
Cassia cinnamon, No. 40 powder	gr. 365
Diluted alcohol, to make	fl.oz. 16

Mix the powders, and without moistening, pack the mixture firmly in a cylindrical percolator, and gradually pour diluted alcohol upon it until 16 fluidounces of percolate are obtained.—U. S. P. 1890.

This preparation was discarded in the U. S. P. 1900 for tincture of gambir, compound, which see.

II.

Catechu, coarse powder	av.oz. 3 $\frac{1}{4}$
Ceylon, cinnamon, bruised	gr. 365
Water	fl.oz. 5 $\frac{3}{4}$
Alcohol	fl.oz. 10 $\frac{1}{4}$

Mix, macerate for 7 days, agitating occasionally, strain with expression, and filter.—Brit. Pharm.

III.

Catechu, coarse powder	av.oz. 3
Water	fl.oz. 3, fl.dr. 5
Alcohol	fl.oz. 13

Mix, macerate for 7 days, agitating occasionally, strain with expression, and filter.—Germ. and Austr. Pharms.

This is actually a simple tincture of catechu and is known as such by the Germ. and Austr. Pharms. The others are, however, just as much simple tinctures because the cinnamon is only a flavoring agent.

Tincture of Celandine, Rademacher's. (Tincture of Chelidonium.)

Chelidonium majus, fresh herb,

Alcohol, each, equal parts by weight

Contuse the herb to a pulp, add the alcohol, macerate for 2 days, agitating occasionally, express, and filter.—H.

Tincture of Chamomile, Compound. (Comp. Tincture of Matricaria.)

This preparation is said to be used by Eclectics:

Chamomile, German	av.oz. 2
Cinnamon	av.oz. 1 $\frac{1}{2}$
Ginger	av.oz. $\frac{1}{2}$
Galangal	av.oz. $\frac{1}{4}$
Clove	av.oz. $\frac{1}{4}$
Cardamom	av.oz. $\frac{1}{4}$
Diluted alcohol, to make	fl.oz. 16

Reduce the drugs to coarse powder and extract by percolation.

Tincture of Chinoidin.

I.

Chinoidin	av.oz. 1 $\frac{1}{2}$
Alcohol	fl.oz. 11
Water	fl.oz. 3
Hydrochloric acid	fl.dr. 4
—Germ. Pharm. (2nd).	

II.

Chinoidin	av.oz. 1 $\frac{1}{2}$
Water	fl.dr. 6
Alcohol	fl.oz. 14
Hydrochloric acid	fl.dr. 5
—Swed. Pharm.	

Tincture of Chirata. (Tincture of Chiretta.)

Chirata, No. 40 powder gr. 720 |

Alcohol, water, each, to make fl.oz. 16 |

Mix the alcohol and water in the proportion of 13 volumes of the former to 7 of the latter. Moisten the powder with this menstruum, macerate for 24 hours, pack firmly in a cylindrical percolator, and gradually pour menstruum upon it until 16 fluidounces of percolate are obtained.—N. F. Appendix, U. S. P. 1890 and Brit. Pharm.

Tincture of Chloroform, Compound.

Chloroform	fl.oz. 1
Alcohol	fl.oz. 4
Compound tincture of cardamom	fl.oz. 5

—Brit. Form. and Brit. Pharm. 1885.

Tincture of Cinchona. (Tincture of Calisaya or Yellow Cinchona or Peruvian Bark—Tincture China—China Tinctur.)

- I. Yellow cinchona, No. 60 powder (yielding not less than 4 per cent. of anhydrous ether-soluble alkaloids)av.oz. $3\frac{1}{4}$
 Glycerinfl.oz. $1\frac{1}{4}$
 Alcohol, water, each, to makefl.oz. 16

Prepare this tincture like tincture of calendula, which see, using a mixture of $10\frac{3}{4}$ fluidounces of alcohol, 4 of water, and $1\frac{1}{4}$ of glycerin as the first menstruum, to be followed by a mixture of 27 volumes of alcohol and 10 of water.

The product should contain, when assayed, 0.75 gm. of anhydrous ether-soluble alkaloids in 100 cc.—U. S. P.

II. The Brit. Pharm. preparation is made from red cinchona instead of the yellow as in the U. S. P.

- Red cinchona, No. 40, powd. av.oz. 4
 Alcohol, water, each.....sufficient

Moisten the drug with 4 fluidounces of a mixture of 3 volumes of alcohol and 1 of water, set aside for 24 hours in a closed vessel, pack in a percolator, and percolate slowly with more of the same menstruum until $13\frac{1}{2}$ fluidounces of percolate are obtained. Express the marc, add the expressed liquid to the percolate, set aside for 24 hours, and filter.

Assay this in the same manner as directed for liquid extract of cinchona, and dilute the filtrate with the same menstruum so that the 100 grams of the mixture shall contain 1 gram of alkaloids.

III.

- Red cinchona, No. 20 powderav.oz. 3
 Waterfl.oz. $3\frac{1}{2}$
 Alcoholfl.oz. 13

Mix, macerate for 7 days, agitating occasionally, strain with expression and filter.—Germ. Pharm.

V.

- Drug, moderately fine powdergr. 730

- Distilled waterfl.oz. $3\frac{1}{4}$
 Alcoholfl.oz. $13\frac{1}{4}$
 —Homeopathic.

This is intended to make 16 fluidounces. See Tinctures, Homeopathic, for method of preparation. Any good cinchona bark may be used.

This makes a 1x tincture from which dilutions are to be made by addition of dispensing alcohol. See Dilutions, Homeopathic.

Tincture of Cinchona, Comp. (Comp. Tincture of Peruvian Bark—Huxham's Tincture of Bark—Tinctura China Composita.)

I.

- Red cinchona (yielding not less than 5 per cent. of anhydrous cinchona alkaloids)av.oz. 3
 Bitter orange peel.....av.oz. 4
 Serpentinaav.oz. 1
 Glycerinfl.oz. $3\frac{3}{4}$
 Alcohol, water, each to makefl.oz. 48

Reduce the drugs to No. 60 powder, then prepare the tincture exactly like tincture of cinchona, which see.—U. S. P.

II.

- Bitter orange peel, dried, well bruisedav.oz. $2\frac{1}{2}$
 Serpentina, No. 40 powderav.oz. $1\frac{1}{4}$
 Cochineal, powdergr. 70
 Spanish saffrongr. 140
 Tincture of cinchona, Brit. Pharm.fl.oz. 24
 Alcohol, water, each, to makefl.oz. 48

Mix the drugs with 6 fluidounces of water and 18 of alcohol, set aside in a closed vessel for 7 days, agitating frequently, strain, express the marc, mix the liquids, add the tincture of cinchona and enough of a mixture of 1 volume of water and 3 of alcohol to make 48 fluidounces, and filter.—Brit. Pharm.

This differs from the formula of the preceding Brit. Pharm., which was as follows:

- Red cinchona, No. 40 powderav.oz. 5
 Bitter orange peel, cut small and bruisedav.oz. $2\frac{1}{2}$
 Serpentina, bruisedav.oz. $1\frac{1}{4}$

Spanish saffrongr. 140
 Cochinealgr. 70
 Diluted alcohol, to make..fl.oz. 48
 Extract the drugs by percolation.

The newer preparation is superior because it contains a definite proportion of cinchona alkaloids, and because containing a larger proportion of alcohol in the menstruum which makes it a better solvent in this instance.

III. The original formula for "Huxham's tincture of bark" is stated to be as follows:

Red cinchona, powder....av.oz. 4
 Bitter orange peel.....av.oz. 3
 Serpentina, powdergr. 80
 Spanish saffrongr. 160
 Cochineal, powdergr. 80
 Brandyfl.oz. 40

Digest in a warm place for 3 or 4 days, agitating frequently, then express and filter.

This preparation is more like the tincture of the Brit. Pharm. than it is that of the U. S. P.

Ferrated Huxham's tincture is prepared by dissolving 144 grains of soluble "scale" iron phosphate in $\frac{1}{2}$ fluidounce of warm water, and adding this to 16 fluidounces of the tincture.

IV.

Red cinchona, coarse powderav.oz. 3
 Bitter orange peel, cut moderately fineav.oz. 1
 Gentian root, cut moderately fineav.oz. 1
 Cassia cinnamonav.oz. $\frac{1}{2}$
 Waterfl.oz. 6
 Alcoholfl.oz. 21 $\frac{1}{2}$

Mix, macerate for 7 days, agitating occasionally, strain with expression, and filter.—Germ. Pharm.

Tincture of Cinchona, Detannated.

Fluid extract of cinchona,
 U. S. P.fl.oz. 3
 Alcoholfl.oz. 8
 Solution of iron tersulfate..fl.oz. 6
 Ammonia water (U. S. P.
 or 10 p. c.)fl.oz. 6
 Water, diluted alcohol, each,
 to makefl.oz. 16

To the ammonia water, diluted with 24 fluidounces of water, gradually add the solution of iron tersulfate, previous-

ly diluted with 40 fluidounces of water, under constant stirring. Pour this mixture, containing ferric hydrate as a precipitate, upon a wet muslin strainer (which has been weighed, after having been wetted and deprived of the excess of water by moderate pressure), and when the liquid has drained off, return the precipitate to the vessel, and mix it intimately with about 64 fluidounces of water. Again drain it on the strainer, transfer it once more to the vessel, and treat it as before. Finally drain and press the precipitate on the strainer until it weighs 8 $\frac{3}{4}$ av.ounces.

Mix the fluid extract of cinchona with 8 fluidounces of alcohol, and add the ferric hydrate previously prepared. Agitate the mixture frequently, until the tincture is deprived of tannin, which may be known by the absence of a blackish-green color when a small portion of the clear tincture is treated with a drop or two of tincture of iron chlorid. Insert a plug of absorbent cotton into a suitable percolator, and introduce the mixture. As soon as the liquid has disappeared from the surface, pour on enough diluted alcohol to make the product measure 16 fluidounces.

This preparation is practically identical, in strength of cinchona (without the tannin), with the official tincture of cinchona.—N. F.

Tincture of Cinchona, Ferrated.

Comp. tincture of cinchona..fl.oz. 16
 Ferric hydrate, freshly precipitatedav.oz. $\frac{1}{2}$
 Citric acid, alcohol.....sufficient
 Citrate of iron and ammoniumgr. 256

Mix the tincture with the hydrate, agitate occasionally until the tincture is detannated, extract the precipitate with boiling alcohol until all the alkaloid has been extracted, evaporate the solution to dryness, dissolve in a little water by the aid of a small amount of citric acid, add to the filtered liquid along with the citrate of iron and ammonium and agitate till dissolved.—Eclectic.

Tincture of Cinnamon.

- I.
 Saigon cinnamon, No. 50
 powderav.oz. $3\frac{1}{4}$
 Glycerinfl.oz. $1\frac{1}{4}$
 Alcohol, water, each, to
 makefl.oz. 16
 —U. S. P.

Prepare this tincture exactly like tincture of cinchona, which see.

This preparation is twice the strength of that of the U. S. P. 1890.

- II.
 Ceylon cinnamon, No. 60
 powderav.oz. $3\frac{1}{4}$
 Alcohol, water, each, to
 makefl.oz. 16

Moisten the drug with $3\frac{1}{4}$ fluidounces of a mixture of 1 volume of water and 3 of alcohol, and extract by percolation with the same menstruum.—Brit. Pharm.

III. The preparation of the Germ. and Austr. Pharms. is a tincture of cassia, made as follows:

- Cassia cinnamon, No. 20
 powderav.oz. 4
 Waterfl.oz. $4\frac{3}{4}$
 Alcoholfl.oz. $17\frac{1}{4}$

Mix, macerate for 7 days, agitating occasionally, strain with expression, and filter.

Tincture of Cinnamon, Compound.

- Cinnamon, Ceylonav.oz. $\frac{1}{2}$
 Cardamomgr. 90
 Prickly-ash berriesgr. 90
 Gingergr. 90
 Diluted alcohol, to make....fl.oz. 16

Extract the mixed drugs in fine powder by percolation or maceration.—Ecclectic.

Tincture of (White) Clover. (Tincture of Trifolium repens.)

Tincture and dilutions of white clover are to be made the same as of red clover. See Tincture of Red Clover.—Homeopathic.

Tincture of Coca. (Tincture of Erythroxylon.)

- I.
 Dry drug (leaves, carefully
 selected)gr. 730
 Distilled waterfl.oz. 8
 Alcoholfl.oz. 8. fl.dr. 5
 —Homeopathic.

This is intended to make 16 fluidounces. See Tinctures, Homeopathic, for method of preparation.

This makes a 1x tincture. Dilutions: 2x is to be made from 1 volume of tincture, 4 of distilled water, and 5 of alcohol. See Dilutions, Homeopathic.

- II.
 Coca, coarse powder.....av.oz. 3
 Waterfl.oz. $4\frac{3}{4}$
 Alcoholfl.oz. $11\frac{1}{2}$
 Mix, macerate for 10 days, agitating occasionally, strain with expression, and filter.—Codex.

Tincture of Cocculus Indicus. (Tincture of Indian Cockle.)

- Dry drug, moderately fine
 powdergr. 730
 Alcohol, to make.....fl.oz. 16
 See Tinctures, Homeopathic, for method of preparation.

This tincture should be filtered at a temperature of or below 10 deg. C. to remove the fatty acids.—Homeopathic.

This makes a 1x tincture, from which dilutions are to be made with dispensing alcohol. See Dilutions, Homeopathic.

Tincture of Cochineal. (Tincture Coccionellæ — Tincture Cocci — Tincture of Coccionella or Coceus Cacti.)

- I.
 Cochineal, powderav.oz. $1\frac{1}{2}$
 Waterfl.oz. $3\frac{1}{2}$
 Alcoholfl.oz. 13
 Macerate for 3 days, agitating occasionally, and filter.—H.

- II.
 Cochineal, powdergr. 730
 Diluted alcohol, to make....fl.oz. 16
 Mix, macerate for 7 days, agitating occasionally, strain with expression, and filter.—Brit. Pharm.

This preparation may be used for coloring purposes, as for coloring elixirs.

III.

- Dry druggr. 730
 Distilled waterfl.oz. 8
 Alcoholfl.oz. 8. fl.dr. 5
 —Homeopathic.

This is intended to make 16 fluidounces. See Tinctures, Homeopathic, for method of preparation.

This makes a 1x tincture. Dilutions: 2x is to be made from 1 volume of tincture, 4 of distilled water, and 5 of alcohol. 3x is to be made from this with dispensing alcohol. See Dilutions, Homeopathic.

Tincture of Coffee. (Tincture of Coffee.)

Dry drug (the seed, using the best unroasted "Mocha" coffee)gr. 730
Alcohol, to make.....fl.oz. 16
—Homeopathic.

See Tinctures, Homeopathic, for method of preparation.

This makes a 1x tincture, from which dilutions are made with dispensing alcohol. See Dilutions, Homeopathic.

Tincture of Colchicum Seed. (Tincture of Colchicum, U. S. P. 1880.)

- I.
Colchicum seed, No. 50 powder (containing not less than 0.55 per cent. of colchicine)av.oz. 1¾
Alcohol, water, each, to makefl.oz. 16

Prepare this tincture like tincture of belladonna, using a mixture of 3 volumes of alcohol and 2 of water as a menstruum.—U. S. P.

This preparation, when assayed, should contain 0.05 of colchicine in 100 cc.

- II.
Colchicum seed, No. 30 powderav.oz. ¾
Diluted alcohol, to make....fl.oz. 16
Extract by percolation.—Brit. Pharm.

This preparation is rather more than 1½ times the strength of that of the Brit. Pharm. 1885, which was made from 2 av.ounces of drug and enough diluted alcohol to make 16 fluidounces.

- III.
Colchicum seed, No. 20 powderav.oz. 1
Waterfl.oz. 3½
Alcoholfl.oz. 13

Mix, macerate for 7 days, agitating occasionally, strain with expression, and filter.—Germ. Pharm.

Tincture of Colchicum, Compound.

Colchicum seed, fine powd.av.oz. 1
Black cohosh, fine powder.av.oz. 1½
Diluted alcohol, to make...fl.oz. 16

Prepare the tincture by percolation or maceration.—Eclectic.

This preparation may be extemporized by mixing 6½ fluidounces of U. S. P. tincture of colchicum seed, 7½ fluidounces of U. S. P. tincture of black cohosh and 2 fluidounces of diluted alcohol.

Tincture of Colocynth. (Tincture of Bitter Apple.)

- I.
Colocynth, with seeds, cut coarseav.oz. 1½
Waterfl.oz. 3½
Alcoholfl.oz. 13

Mix, macerate for 7 days, agitating occasionally, strain with expression, and filter.—Germ. Pharm.

- II.
Dry drug (pulp of the fruit, without the seeds).....gr. 730
Distilled waterfl.oz. 8
Alcoholfl.oz. 8. fl.dr. 5
—Homeopathic.

This is intended to make 16 fluidounces. See Tinctures, Homeopathic, for method of preparation.

This makes a 1x tincture. Dilutions: 2x is to be made from 1 volume of tincture, 3 of distilled water and 6 of alcohol. 3x and higher are to be made with dispensing alcohol. See Dilutions, Homeopathic.

Tincture of Colocynth Seed, Rademacher's.

Colocynth seedav.oz. 3
Waterfl.oz. 3½
Alcoholfl.oz. 12½

Wash the seed with water, dry it, reduce to coarse powder, and add the water and alcohol. Macerate for 14 days, agitating occasionally, express, and filter. The product should weigh 14½ av.ounces.—H.

Tincture of Columbo. (Tincture of Calumba.)

- I.
Columbo, No. 20 powder..av.oz. ¾
Alcohol, water, each, to makefl.oz. 16

Mix alcohol and water in the proportion of 3 volumes of the former to 2 of the latter. Moisten the drug with 13 fluidrams of this mixture, transfer it to

a percolator, and, without pressing the drug, allow it to stand, well covered, for 24 hours; then pack with moderate pressure, pour on enough menstruum to saturate the powder and leave a stratum above it, and allow percolation to proceed slowly, pouring on enough menstruum to make 16 fluidounces of percolate.—U. S. P.

On account of the large amount of extractive matter in the drug, the maceration is omitted.

This preparation is twice as strong as that of the U. S. P. 1890.

II. The preparation of the Brit. Pharm. is one-half the strength of that of the U. S. P. and is made with a mixture of 2 volumes of alcohol and 1 of water by the process of maceration.

Tincture of Condurango. (Tincture of Cundurango.)

Dry drug (bark)gr. 730
Distilled waterfl.oz. 8
Alcoholfl.oz. 8. fl.dr. 5
—Homeopathic.

This is intended to make 16 fluidounces. See Tinctures, Homeopathic, for method of preparation.

This makes a 1x tincture. Dilutions: 2x is to be made from 1 volume of tincture, 4 of distilled water and 5 of alcohol. 3x and higher are to be made with dispensing alcohol. See Dilutions, Homeopathic.

Tincture of Conium. (Tincture of Hemlock.)

I. Conium (fruit, the so-called seed), No. 30 powder...av.oz. $2\frac{1}{4}$
Diluted hydrochloric acid....m. 30
Diluted alcohol, to make...av.oz. 15

Moisten the powder with 6 fluidrams of diluted alcohol, previously mixed with the acid, and macerate for 24 hours; then pack it moderately in a conical glass percolator, and gradually pour diluted alcohol upon it until 15 av.ounces of tincture are obtained.—N. F. Appendix and U. S. P. 1880.

II.

Conium fruit, recently reduced to No. 40 powder.av.oz. $3\frac{1}{4}$
Alcohol, water, each, to makefl.oz. 16

Extract the drug by percolation with a mixture of 3 volumes of alcohol and 1 of water.

Tincture of Convallaria. (Tincture of Lily-of-the-Valley.)

Lily-of-the-valley flowers and stalks, dried, No. 20 powderav.oz. 2
Water, alcohol, to make....fl.oz. $15\frac{1}{2}$

Extract the drug by percolation, using as menstruum a mixture of 9 volumes of alcohol with 5 of water.—Brit. Form.

Tincture of Copaiva.

Copaiba balsamgr. 730
Alcoholfl.oz. $14\frac{1}{2}$
—Homeopathic.

This is intended to make 16 fluidounces.

This makes a 1x tincture. Dilutions are to be made from this with dispensing alcohol. See Dilutions, Homeopathic.

Tincture of Copper Acetate, Rademacher's.

Copper sulfate, pure.....gr. 680
Lead acetate, pure, crystal. gr. 1020
Distilled waterfl.oz. $8\frac{1}{2}$
Alcoholfl.oz. $7\frac{3}{4}$

Triturate the two salts together until a smooth paste is formed, transfer this to a copper vessel, add the water, heat to boiling, allow to cool, add the alcohol, set aside for 4 weeks, agitating frequently, and filter.—H.

A more expeditious process is the following:

Copper acetate, crystallized..gr. 570
Distilled waterfl.oz. 9
Alcoholfl.oz. 7

Dissolve the acetate in the water previously warmed, and filter.

Tincture of Corn Smut. (Tincture of Ustilago Maidis.)

Corn smut, fresh, containing solidsgr. 730
(plant moisture, gr. 730)
Distilled waterfl.oz. $4\frac{3}{4}$
Alcoholfl.oz. $10\frac{1}{4}$
—Homeopathic.

This is intended to make 16 fluidounces. See Tinctures, Homeopathic, for method of preparation.

This makes a 1x tincture. Dilutions: 2x is to be made from 1 volume of

tincture, 3 of distilled water, and 6 of alcohol; 3x and higher are to be made with dispensing alcohol. See Dilutions, Homeopathic.

Tincture of Corydalis. (Tincture of Turkey Corn.)

Turkey corn, fine powder...av.oz. 3
Diluted alcohol, to make....fl.oz. 16

Extract the drug by percolation or maceration.—Eclectic.

Tincture of Corydalis, Comp'd. (Compound Tincture of Turkey Corn—Scudder's Alternative.)

Turkey corngr. 320
Yellow dockgr. 320
Tag alder bark.....gr. 320
Figwort herbgr. 320
Mandrake rootgr. 320
Sugarav.oz. 3
Alcohol, water, each, to
makefl.oz. 16

Mix the first four drugs, reduce to fine powder, and extract by percolation with diluted alcohol so as to obtain 12 fluidounces of percolate. To the mandrake in fine powder add $2\frac{3}{4}$ fluidounces of boiling water, macerate in a hot place for 2 hours, and express, or else obtain $2\frac{1}{2}$ fluidounces of infusion by percolation. In this liquid dissolve the sugar, and add the solution to the previously prepared tincture.—Eclectic modified.

Dr. Scudder believed that water extracts more of the alterative properties of mandrake than those of alcohol.

Tincture of Coto.

I.

Coto bark, bruised.....av.oz. 2
Alcohol, to make.....fl.oz. $14\frac{1}{2}$

Macerate the drug with 12 fluidounces of alcohol during 7 days; then pour off the liquid, press the residue, and filter the united liquids through paper. Lastly, wash the residue transferred to the filter with enough alcohol to make the product measure $14\frac{1}{2}$ fluidounces.

Coto bark is derived from an undetermined tree, probably belonging to the natural order Lauraceæ, and is obtained from Bolivia. There are two varieties known, one as coto and the other as paracoto bark. True coto bark is, at

times, difficult to obtain in the market, and the paracoto bark is then frequently substituted for it. While they possess some useful properties in common, yet they differ materially in other respects. Hence, the paracoto bark should not be substituted for the true coto bark.—N. F.

II.

Coto bark, bruisedgr. 730
Alcohol, to make.....fl.oz. 16

Macerate the drug with 16 fluidounces of alcohol for 7 days, agitating occasionally, express, filter, and add alcohol to make 16 fluidounces.

Tincture of Couch Grass. (Tincture of Dog Grass or Triticum.)

Fresh drug (root), containing solidsgr. 730
(plant moisture, av.oz. 3.9)
Distilled waterfl.oz. $2\frac{3}{4}$
Alcoholfl.oz. $10\frac{1}{4}$
—Homeopathic.

This is intended to make 16 fluidounces. See Tinctures, Homeopathic, for method of preparation.

This makes a 1x tincture. Dilutions: 2x is to be made from 1 volume of tincture, 3 of distilled water, and 6 of alcohol; 3x and higher are to be made with dispensing alcohol. See Dilutions, Homeopathic.

Tincture of Cowhage. (Tincture of Dolichos or Mucuna.)

Cowhagegr. 730
Alcohol, to make.....fl.oz. 16
—Homeopathic.

See Tinctures, Homeopathic, for method of preparation.

This makes a 1x tincture. Dilutions are to be made with dispensing alcohol. See Dilutions, Homeopathic.

Tincture of Cramp Bark, Compound.

See Tincture of Viburnum, Compound.

Tincture of Cramp Bark, Vionaus.

Cramp bark, coarse powd.av.oz. 1
Scullycap, coarse powder...av.oz. $\frac{1}{2}$
Skunk cabbage, coarse powderav.oz. $\frac{1}{2}$
Clove, coarse powder.....av.oz. $\frac{1}{4}$
Capsicum, powdergr. 60
Sherry winefl.oz. 32
—Eclectic.

Macerate for several days, and filter.

Tincture of Cubeb.

Cubeb, No. 30 powder....av.oz. $3\frac{1}{4}$
 Alcohol, to make.....fl.oz. 16

Moisten the drug with $1\frac{1}{2}$ fluidounces of alcohol, macerate for 24 hours, then pack firmly in a cylindrical percolator, and gradually add alcohol until 16 fluidounces of percolate are obtained.—N. F. Appendix, U. S. P. 1890, and Brit. Pharm.

II. Homeopathic:

This is of one-half the strength of the preceding preparation. It may be made from the latter by adding to it an equal volume of alcohol.

This makes a 1x tincture, from which dilutions are to be made with dispensing alcohol. See Dilutions, Homeopathic.

Tincture of Cudbear. (Tinctura Persionis.)

Cudbear, fine powder.....av.oz. 2
 Alcohol, water, each, to
 makefl.oz. $14\frac{1}{2}$

Pack the cudbear in a suitable percolator, and percolate it with a mixture of 1 volume of alcohol and 2 of water, until $14\frac{1}{2}$ fluidounces of tincture are obtained.

This preparation is intended as a coloring agent, when a bright-red tint or color is to be produced, particularly in acid liquids.—N. F.

Tincture of Cudbear, Compound.

Cudbear, fine powder.....gr. 120
 Caramelav.oz. $1\frac{3}{4}$
 Alcohol, water, each, to
 makefl.oz. 16

Mix 1 volume of alcohol with 2 of water. Macerate the cudbear with 12 fluidounces of the menstruum, during 12 hours, agitating occasionally, and then filter through paper, and add the caramel, previously dissolved in 2 fluidounces of water. Then pass enough of the before-mentioned menstruum through the filter to make the whole measure 16 fluidounces.

This preparation is intended as a coloring agent, when a brownish-red tint or color is to be produced.—N. F.

Tincture of Culver's Root. (Tincture of Leptandra—Tincture of Black-Root.)

Culver's root, moderately
 fine powder.....av.oz. 3
 Diluted alcohol, to make....fl.oz. 16

Make into a tincture by percolation or maceration.—Eclectic.

Tincture of Curare.

Druggr. 92
 Distilled waterfl.dr. 8
 Alcoholfl.dr. $8\frac{1}{2}$
 —Homeopathic.

This is intended to make 2 fluidounces.

This is a 1x tincture. Dilutions: 2x is to be made from 1 volume of tincture, 3 of distilled water and 6 of distilled water; 3x and higher are to be made with dispensing alcohol. See Dilutions, Homeopathic.

Tincture of Cyclamen. (Tincture of Sow-Bread or Hog's-Bread.)

Fresh tubersav.oz. 8
 Alcoholfl.oz. 16
 —Eclectic.

The tubers should be cut into small pieces, macerated with the alcohol for 7 to 14 days, and filtered.

Prof. Scudder recommends the fresh tubers of hot-house plants.

Tincture of Digitalis. (Tincture of Foxglove.)

I.
 Digitalis, No. 60 powder..av.oz. $1\frac{3}{4}$
 Diluted alcohol, to make...fl.oz. 16
 Prepare like tincture of cantharides, using diluted alcohol as the menstruum.—U. S. P.

II. Brit. Pharm.:

Digitalis, No. 20 powder...av.oz. 2
 Alcohol, water, each, to
 makefl.oz. $15\frac{1}{2}$

Extract the drug by percolation with a mixture of 7 volumes of alcohol and 4 of water.

III.

Digitalis, coarse powder...av.oz. 1
 Waterfl.oz. $3\frac{1}{2}$
 Alcoholfl.oz. 13

Mix, macerate for 7 days, agitating occasionally, strain with expression, and filter.

In the Germ. Pharm., 3rd edition, this preparation was made from fresh leaves as follows:

Digitalis leaves, freshly gatheredav.oz. 15
Alcoholfl.oz. 20¾

Bruise the drug in a wedgewood mortar to a uniform pulp, incorporate the alcohol, allow to macerate for 7 days, then express, set the liquid aside in a cool place for 2 days, and filter.

Keep protected from daylight.

Tincture of Digitalis, Ethereal.

Digitalis, cut very fine....av.oz. 1½
Spirit of ether.....fl.oz. 18½

Mix, macerate for 7 days, agitating occasionally, and strain with expression.—Germ. Pharm. 2nd edition.

See also Tinctures, Ethereal.

Tincture of Digitalis, Fat-Free.

England's process:

Digitalis, freshly-ground....av.oz. 1¾
Purified petroleum benzin,
Ammonia water,
Diluted alcohol, each.....sufficient

Exhaust the drug with the benzin by maceration, or maceration and percolation together, as may be most convenient. Then dry the drug, preferably by exposure to both sun and air to entirely remove the benzin. Then extract the drug by the U. S. P. process, continuing percolation until 15¾ fluidounces of percolate are obtained. Neutralize the latter carefully with ammonia water, which will require about 1½ or 2 fluidrams. Then add diluted alcohol to make 16 fluidounces.

The product mixes clear with water, contains no fats or free acids, and does not cause gastric disturbance.

Tincture of Ergot.

The tincture of ergot of the Brit. Pharm. is an ammoniated tincture, as follows:

Ergot, No. 20 powder....av.oz. 4¾
Ammonia water, 10 p. c....fl.dr. 13
Alcohol water, each, to
makefl.oz. 16

Mix the ammonia water with 5½ fluidounces of water and 9 fluidounces of alcohol, moisten the drug with 13

fluidrams of this menstruum, and percolate with the remainder. Express the marc, mix the expressed liquid with the percolate, add enough of a mixture of 4 volumes of water and 7 of alcohol to make 16 fluidounces, and filter.

In the Brit. Pharm. 1885, diluted alcohol was used as the menstruum.

Tincture of Ergot, Ammoniated.

See Tincture of Ergot.

Tinctures, Ethereal.

The following is the general formula of the N. F. for ethereal tinctures:

Drug, properly comminutedav.oz. 1½
Alcohol, stronger ether, each,
to makefl.oz. 14½

Percolate the drug in the usual manner, but with proper precautions to avoid loss of menstruum by evaporation, with a mixture of 1 volume of stronger ether and 2 of alcohol, until 14½ fluidounces of percolate are obtained.

This formula is to be used, when ethereal tinctures of belladonna, castor, digitalis, lobelia, valerian, or of other drugs, are to be prepared.

Tincture of Eucalyptus. (Tincture of Fever Tree or Australian Fever Tree.)

I.

Eucalyptus, No. 20 powder.av.oz. 3¼
Alcohol, to make.....fl.oz. 16
Extract the drug by percolation.

II.

Dry drug (leaves).....gr. 730
Distilled waterfl.dr. 13
Alcoholfl.oz. 14 .fl.dr. 5
—Homeopathic.

This is intended to make 16 fluidounces. See Tinctures, Homeopathic, for method of preparation.

This makes a 1x tincture, from which dilutions are to be made with dispensing alcohol. See Dilutions, Homeopathic.

Tincture of Euphorbia Pilulifera.

Euphorbia, pilulifera, No. 40
powderav.oz. 3¼
Water, alcohol, to make....fl.oz. 16

Prepare the tincture by percolation, using as a menstruum a mixture of 9 volumes of alcohol with 5 of water.

The drug is the herb of *Euphorbia pilulifera* collected when in flower and carefully dried. The involucre glands of the perianth are without appendages; the mature seeds are minutely wrinkled.

Tincture of Fennel, Compound.
(*Romershausen's Augen Essenz.*)

The following is the simplest formula for this preparation:

Fennel seed, contused.....av.oz.	4
Oil of fennel.....drops	40
Oil of neroli.....drops	4
Water.....fl.oz.	4
Alcohol.....fl.oz.	11½

Macerate for several days and express.—H.

This was originally a secret remedy in Germany, but is now frequently compounded by pharmacists and sold as such. It is used by the public to preserve, strengthen and restore the eyesight, it being mixed before use with 5 volumes of soft water.

Tincture of Ferrated Extract of Apples. (*Pomated Tincture of Iron*—*Tinctura or Liquor Ferri Pomata*—*Tincture or Solution of Crude Malate of Iron.*)

Ferrated extract of apples.av.oz.	1½
Alcohol.....fl.dr.	11
Cinnamon water, to make..fl.oz.	14½

Dissolve the ferrated extract of apples in 11 fluidounces of cinnamon water, add the alcohol, filter, and pass enough cinnamon water through the filter to make 16 fluidounces.

Each fluidram represents about ⅓ gr. of metallic iron.—N. F.

This preparation is practically identical with that official in the Germ. Pharm., which is made from 1 av.ounce of the ferrated extract and 9 av.ounces of the cinnamon water of the Germ. Pharm.

Tinctures of Fresh Drugs.

See Tinctures of Fresh Herbs.

Tinctures of Fresh Herbs. ("Green," "German" or "Specific" Tinctures.)

According to the U. S. P., tinctures of fresh (freshly-gathered) herbs, when not otherwise directed, are to be pre-

pared by macerating 8¼ av.ounces of the fresh herb, cut, bruised or crushed with 16 fluidounces of alcohol in a closed vessel, in a moderately warm place, during 14 days, stirring occasionally; then express the liquid with strong pressure and filter it through a paper filter.

The drug may be expressed by means of a tincture press.

Tinctures of fresh drugs are in considerable use and hence the above general formula serves a useful purpose. The so-called "green" or "German" tinctures, sometimes also called "specific" tinctures, of the market, are tinctures of fresh drugs.

Tincture of Gambir, Compound.

Gambir.....gr.	365
Saigon cinnamon.....gr.	182
Diluted alcohol, to make..fl.oz.	16

Macerate the gambir and cinnamon in a stoppered container, in a moderately warm place, with 12 fluidounces of diluted alcohol, during 48 hours, agitating frequently. Then filter through absorbent cotton or a plain paper filter, and, when the liquid has drained off completely, pass enough diluted alcohol through the residue to make the filtrate measure 16 fluidounces.—U. S. P.

Gambir is the so-called pale catechu and this tincture is intended as a substitute for the compound tincture of catechu of former editions of the U. S. P.

Tincture of Gelsemium. (*Tincture of Yellow Jessamine.*)

I.

Gelsemium, No. 60 powd..av.oz.	1¾
Alcohol, water, each, to make.....fl.oz.	16
—U. S. P.	

Prepare like tincture of cantharides, using as a menstruum a mixture of 13 volumes of alcohol and 7 of water.

II.

Gelsemium, No. 40 powder..gr.	730
Alcohol, water, each, to make.....fl.oz.	16

Mix alcohol and water in the proportion of 12 volumes of the former to 7

of the latter, and extract the drug by percolation with this menstruum.—Brit. Pharm.

Tincture of Gentian.

Gentian, cut moderately

fine	av.oz. 3
Water	fl.oz. 3½
Alcohol	fl.oz. 13

Mix, macerate for 7 days, agitating occasionally, strain with expression, and filter.—Germ. Pharm.

Tincture of Gentian, Compound.

I.

Gentian	av.oz. 5
Bitter orange peel.....	av.oz. 2
Cardamom	av.oz. ½
Alcohol, water, each, to make	fl.oz. 48

Mix 3 volumes of alcohol with 2 of water. Reduce the three drugs to No. 40 powder, moisten this with 3 fluid-ounces of menstruum, transfer it to a percolator, and, without pressing the drug, allow it to stand, well covered, for 12 hours, then pack it moderately and pour on enough menstruum to saturate the powder and leave a stratum above it. When the liquid begins to drop from the percolator, close the lower orifice, and, having closely covered the percolator, macerate for 12 hours; then allow percolation to proceed slowly, pouring on enough menstruum to make 48 fluidounces of percolate.—U. S. P.

II. The preparation of the Brit. Pharm. differs from that of the U. S. P. in having 1¾ av.ounces of bitter orange peel and 260 grains of cardamom and in being extracted with diluted alcohol by maceration.

III.

Gentian	av.oz. ¼
Columbo	av.oz. ¼
Swamp milkweed	av.oz. ¼
Rhubarb	av.oz. ¼
Sassafras	av.oz. ¼
Prickly-ash berries	av.oz. ¼
Brandy, to make.....	fl.oz. 16

Prepare a tincture by the usual method of percolation or maceration.—Eclectic.

Tincture of Ginger.

I.

Jamaica ginger, No. 50 powder	av.oz. 3¼
Alcohol, to make.....	fl.oz. 16

Prepare like tincture of black cohosh.

—U. S. P.

II. The preparation of the Brit. Pharm. differs from that of the U. S. P. only in being made with one-half the proportion of drug.

The Brit. Pharm. 1885 recognized two tinctures of ginger; one was made with somewhat more than 2 av.ounces of drug to the pint of tincture (one-fourth stronger than that of the present Brit. Pharm.); the other, called "strong tincture of ginger" (*tinctura zingiberis fortior*), was made with 8¼ av.ounces of drug to the pint of tincture. The latter is now recognized by the Brit. Form.

III.

Ginger, cut moderately fine.....	av.oz. 3
Water	fl.oz. 3½
Alcohol	fl.oz. 13

Mix, macerate for 7 days, agitating occasionally, strain with expression, and filter.

IV.

Dry drug, Jamaica preferred.....	gr. 730
Alcohol, to make.....	fl.oz. 16

—Homeopathic.

See Tinctures, Homeopathic, for method of preparation.

This forms a 1x tincture, one-half the strength of the U. S. P. tincture, from which it may be made by mixing it with an equal volume of alcohol.

Dilutions are to be made with dispensing alcohol. See Dilutions, Homeopathic.

V. A cheap tincture of ginger suitable for counter sale and saloon use may be prepared as follows:

Ginger, African, powder.....	av.oz. 60
Capsicum, powder	av.oz. 1
Alcohol, water, each, to make	fl.oz. 64

Use a menstruum composed of 3 volumes of alcohol and 1 of water and extract the mixed drugs by percolation or maceration.

Tincture of Glonoin. (Tincture of Nitroglycerin.)

The Homeopathic tincture is the spirit of glonoin, U. S. P., and is a 2x tincture. Dilutions are to be made from this with dispensing alcohol. See Dilutions, Homeopathic.

Tincture, Golden.

See Drops, Gold.

Tincture of Golden Rod, Rademacher's. (Tincture Virgæ Aureæ.)

Golden rod, fresh flowering herb,

Alcohol, each..equal parts by weight

Contuse the herb to a pulp, add the alcohol, macerate for 2 days, agitating occasionally, express, and filter.—H.

Tincture of Golden Seal. (Tincture of Hydrastis.)

I.

Hydrastis, No. 60 powder
(containing not less than
2.5 per cent. of hydrastis).av.oz. $3\frac{1}{4}$
—U. S. P.

Prepare like tincture of black cohosh, using as a menstruum a mixture of 13 volumes of alcohol and 7 of water.

The product, when assayed, should contain not less than 0.4 gm. of hydrastine in 100 cc.

II. The preparation of the Brit. Pharm. is one-half the strength of the above; the menstruum is a mixture of 7 volumes of alcohol and 4 of water; the process is percolation.

Tincture of Golden Seal, Compound.

Golden sealav.oz. 2
Lobelia seedav.oz. 2
Diluted alcohol, to make...fl.oz. 16

Extract the drugs by percolation or maceration.—Eclectic.

Authority is also given for making this preparation by mixing 8 fluidounces of U. S. P. tincture of golden seal, 5 of U. S. P. tincture of lobelia and 3 fluidounces of diluted alcohol.

Tincture of Green Soap. (Tincture Saponis Vieridis.)

This is now known as liniment of soft soap, which see.

Tincture of Green Soap, Compound.

Green (soft) soap.....av.oz. $2\frac{1}{2}$
Oil of cade.....fl.dr. $2\frac{1}{2}$
Alcohol, to make.....fl.oz. 16

Dissolve the soap in 12 fluidounces of alcohol, add the oil, and then enough alcohol to make the product measure 16 fluidounces, and filter.—N. F.

Tincture of Guaiac.

I.

Guaiac resin ("gum guaiac"),
No. 40 powder.....av.oz. $3\frac{1}{4}$
Alcohol, to make.....fl.oz. 16

Macerate the drug in a stoppered container, in a moderately warm place, with 12 fluidounces of alcohol, during 3 days, with frequent agitation; then filter, and when the liquid has drained off, pour on enough alcohol to make 16 fluidounces of filtrate.—U. S. P. and Brit. Form.

II. Homeopathic:

This is one-half the strength of the U. S. P. tincture and may be made from the latter by mixing it with an equal volume of alcohol. Dilutions are to be made from this with dispensing alcohol. See Dilutions, Homeopathic.

Tincture of Guaiac, Ammoniated. (Comp Tincture of Guaiac.)

I.

Guaiac resin ("gum guaiac"),
No. 40 powderav.oz. $3\frac{1}{4}$
Aromatic spirit of ammonia,
to makefl.oz. 16

Macerate the guaiac, in a stoppered container, in a moderately warm place, with 12 fluidounces of the spirit, during 3 days, agitating frequently; then filter, and, when the liquid has drained off, pour on enough spirit to make 16 fluidounces of filtrate.—U. S. P.

II.

Guaiac resin, powder.....av.oz. $3\frac{1}{4}$
Oil of nutmeg.....m. 24
Oil of lemon.....m. 16
Stronger ammonia water of
the Brit. Pharm. ($32\frac{1}{2}$ p.
c. by weight).....fl.dr. $9\frac{1}{2}$
Alcohol, to make.....fl.oz. 16

Mix the water with 13 fluidounces of alcohol, add the resin, set aside in a closed vessel for 48 hours, agitating fre-

quently, filter, dissolve the oils in the filtrate, and pass enough alcohol through the filter to make the filtrate measure 16 fluidounces.—Brit. Pharm.

Tincture of Guaiac, Aromatic.

'See Mixture, Cholera, Greenhow's.

Tincture of Guaiac, Comp. (Dewees' Tincture of Guaiac—Alkaline Tincture of Guaiac.)

Guaiac resin.....av.oz. 2..gr.	85
Potassium carbonate	gr. 45
Pimenta, moderately fine powder	gr. 240
Pumice, fine powder.....av.oz.	1
Alcohol	fl.oz. 7
Water	fl.oz. 7
Diluted alcohol, to make....fl.oz.	16

Triturate the guaiac and potassium carbonate with the pimenta and the pumice, and afterwards gradually with the alcohol. Next add slowly 7 fluidounces of cold water and triturate the mixture thoroughly. Then filter, and pass enough diluted alcohol through the filter to make 16 fluidounces.

Each fluidram represents $7\frac{1}{2}$ gr. of guaiac resin.—N. F. and Eclectic modified.

Tincture of Hemlock Spruce. (Tincture of Abies Canadensis or Pinus Canadensis.)

Fresh drug (bark and buds) containing solids	gr. 730
(plant moisture, av.oz. 3.9)	
Alcohol	fl.oz. $13\frac{1}{4}$
—Homeopathic.	

This is intended to make 16 fluidounces.

This is a 1x tincture. See Tinctures, Homeopathic, for method of preparation.

Dilutions are made with dispensing alcohol. See Dilutions, Homeopathic.

Tincture of Henbane. (Tincture of Hyoscyamus.)

Henbane herb, No. 60 powder (containing not less than 0.08 per cent. of mydriatic alkaloids)	av.oz. 134
Diluted alcohol, to make....fl.oz.	16

Prepare like tincture of belladonna leaves.

The product, when assayed, should

contain 0.007 gm. of mydriatic alkaloids in 100 cc.—U. S. P.

The preparation of the Brit. Pharm. is of the same strength, but is not assayed.

Tincture of Hips, Rademacher's. (Tinctura Cynosbati—Tincture of Bedeguar.)

Rose hips, fresh, cut fine..av.oz.	2
Alcohol	fl.oz. $11\frac{1}{2}$

Macerate the hips with the alcohol for 7 days, agitating frequently, express, and filter. The filtrate should weigh 10 av.ounces.—H.

Tincture, Homeopathic.

Tinctures (or alcoholic solutions of solids and semi-solids) of homeopathic pharmacy are made from a variety of substances which are wholly or partially soluble in alcohol. Such substances comprise all plants and parts of plants, such as barks, roots, woods, fruits and seeds, resins, gums, and balsams. This list should also include minerals and chemicals which dissolve more readily in alcohol than in water.

Substances such as phosphorus, and also volatile salts, are better prepared as solutions (tinctures, as they are also called by homeopaths), than as triturations, in the making of which they are volatilized. Such solutions are to be often freshly prepared.

Most of the tinctures of homeopathic pharmacy are made from fresh plant parts and hence the method of preparation deserves especial treatment. All fresh plant parts contain water, which varies in amount, and in order to secure uniformity of product, the dry crude drug is taken as the starting point from whence to calculate the strength of the tincture. Hence the first thing to do is to calculate the proportion of moisture taking a small quantity of the fresh plant part, weighing it, then drying it by gentle heat on a water bath until there is no further loss of weight, and weighing again. The difference between the weight of the fresh drug and that of the dry drug is the weight of the

water contained in the fresh drug, and for this allowance must be made in the preparation of the menstruum. The finished tincture is to contain in every 10 parts an amount of fresh drug equivalent to 1 part of dry drug.

In giving the formula for homeopathic tinctures, the amount of moisture or water which should be present is stated. If more is present, deduct the excess present from the water directed in the menstruum. If this cannot be done (because of use of strong alcohol, or for other reasons), the drug must be cautiously dried until it is reduced to the required weight. If the drug weighs less than the required weight, add enough water to bring it up to the required amount. It will be observed, therefore, that the finished tincture contains alcohol with the proportion of water used with it in the menstruum as well as with the water present in the plant substance.

To illustrate the method of making of tinctures, the following formula is given:

Fresh drug containing solids	100 gm.
(plant moisture, cc. 185)	
Distilled water	200 cc.
Alcohol	650 cc.
To make 1000 cc.	

This means that if the drug used for 1000 cc. of tincture were dried, it would weigh 100 gm. The water present in the drug should weigh 185 gm.; if it is more the drug should be dried somewhat or proportionately less water should be used in the menstruum; if it is less, sufficient water should be added to the drug to bring it up to this amount.

This formula translated into equivalent ordinary terms is as follows:

Fresh drug containing solids..gr.	730
(plant moisture, av.oz.)	3)
Distilled water	3 1/4 fl.oz.
Alcohol	10 1/2 fl.oz.
To make 16 fluidounces..	

These tinctures are made by maceration or by percolation of the drug with the menstruum. Gummy or viscid sub-

stances, or such as are not readily penetrated by alcohol, are best extracted by maceration. If the drug can be finely sliced or bruised to pulp before adding menstruum, this should be done; otherwise it may be used whole. The drug and menstruum should be placed together in a well-closed jar and macerated for a period varying from 2 to 4 weeks, according to the nature of the drug. Then decant the clear liquid and express the residue. The product should measure the total amount indicated in the formula.

Sometimes it may be advantageous to pour on only one-half of the menstruum, to macerate for some time, express as before, triturate the residue with twice its weight of powdered glass, and to complete the extraction by percolation.

As a rule, maceration is employed in the extraction of fresh drugs because of the difficulty of extracting them by percolation. If the method of percolation is used, the drug should be reduced to a pulp in a mincing machine (meat chopper). The drug is then to be packed in a suitably-sized percolator in thin layers with alternating layers of moderately fine glass or fine white sand, then adding menstruum to saturate the drug, covering the percolator closely, macerating for 24 hours or longer, according to the nature of the drug, then allowing the percolate to drop at the rate of 10 to 30 drops per minute, and continuing the addition of menstruum (which should be added frequently so as to keep the drug covered) until the required amount of tincture is obtained.

In making a tincture by percolation, a certain required amount of moisture must be present in the drug exactly as when making a tincture by maceration. If more is present, less water must be used in the menstruum or a portion of it must be evaporated; if less, some water must be added to the drug.

Tinctures of dry drugs are to be made according to the above method of per-

colation, but the regular U. S. P. method may be substituted for it, as it is not inferior and is more convenient.

Distilled water only should be used for these preparations.

Homeopathic tinctures are now usually made of the strength of the first decimal dilution (1x or 1 in 10). In making the dilutions, the diluent or vehicle is described under each tincture.

For method of making the dilutions, method of naming them, etc., see Dilutions, Homeopathic.

Tincture of Hops. (Tinctura Humuli or Lupuli.)

I.

Hops, well dried, No. 20
powderav.oz. 3¼
Diluted alcohol, to make...fl.oz. 16

Moisten the drug with 6 fluidounces of diluted alcohol, macerate for 24 hours, then pack firmly in a cylindrical percolator, and gradually pour diluted alcohol upon it until 16 fluidounces of percolate are obtained.—N. F.

II.

Hopsav.oz. 3¼
Alcohol, water, each, to
makefl.oz. 16

Mix 7 volumes of alcohol with 4 of water, and extract the drug with this menstruum by maceration for 7 days, agitating occasionally, expressing and filtering.—Brit. Pharm.

Tincture of Horseradish. (Tincture of Armoracia or Cochlearia.)

I.

Fresh drug (root) containing
solidsgr. 730
(plant moisture, av.oz. 5)
Distilled waterfl.dr. 13
Alcoholfl.oz. 10¼
—Homeopathic.

This is intended to make 16 fluidounces. See Tinctures, Homeopathic, for method of preparation.

This makes a 1x tincture from which 2x dilution is to be made by mixing 1 volume of tincture, 4 of distilled water, and 5 of alcohol; 3x and higher are to be made with dispensing alcohol. See Dilutions, Homeopathic.

II.

Horseradish root, freshly
gratedav.oz. 5
Alcoholav.oz. 4
Diluted alcoholsufficient

Macerate the drug with the alcohol for 8 days, agitating twice daily, then transfer to a percolator, allow the liquid to drain, and pass enough diluted alcohol through the drug to make the total percolate weigh 10 av.ounces.—Eclectic.

Tincture of Ignatia. (Tincture of St. Ignatius' Bean.)

Ignatia, No. 60 powder....av.oz. 1
Alcohol, water, each.....sufficient

Mix alcohol and water in the proportion of 8 parts by weight of the former to 1 part of the latter. Moisten the drug with 1 fluidounce of the menstruum, and macerate for 24 hours; then pack it firmly in a cylindrical percolator, and gradually pour menstruum upon it, until the drug is exhausted. Reserve the first 9 av.ounces, evaporate the remainder to 1 av.ounce, and mix with the reserved portion. Of this tincture, take any convenient quantity, and, by means of a water bath, evaporate it to dryness. Weigh the resulting extract, and from its weight calculate the quantity of extract contained in the 100 parts of tincture obtained; then dissolve the dried extract in the remainder of the tincture, and add enough of the above menstruum to make the product weigh so many parts that each 100 parts by weight of tincture shall contain 1 part of dry extract. Lastly, mix thoroughly, and filter through paper.

Tincture of ignatia thus prepared represents about 10 parts by weight of ignatia in 100 parts.—N. F. Appendix and U. S. P. 1880.

II.

Dry druggr. 730
Distilled waterfl.oz. 2½
Alcoholfl.oz. 14
—Homeopathic.

This is intended to make 16 fluidounces. See Tinctures, Homeopathic, for method of preparation.

This makes a 1x tincture. Dilutions are to be made from this with dispensing alcohol. See Dilutions, Homeopathic.

Tincture of Iodin.

I.

Iodingr. 510
Potassium iodidgr. 365
Alcohol, to make.....fl.oz. 16

Triturate the iodine and potassium iodide rapidly, in a mortar, to a coarse powder, and transfer it at once to a bottle. Rinse the mortar with several successive portions of alcohol and pour the rinsings into the bottle. Then add alcohol, shaking occasionally, until the iodine and iodide are dissolved, and the finished tincture measures 16 fluidounces.
—U. S. P.

This preparation differs from that of the U. S. P. 1890 in containing potassium iodide and is therefore similar to the tincture of iodine of the Brit. Pharm. and the compound tincture of iodine of the U. S. P. 1870.

The iodine and potassium iodide may be dissolved in the alcohol by agitation, without previous pulverization, but a longer time will be required.

II.

Iodingr. 183
Potassium iodidgr. 183
Distilled waterfl.dr. 3¼
Alcohol, to make.....fl.oz. 16

Mix the iodine, potassium iodide and water in a bottle, and when dissolved add the alcohol.—Brit. Pharm.

This differs from the other tinctures of iodine here given in being much weaker. It is more like the compound tincture of iodine of the U. S. P. 1870, which see.

III.

Iodin, trituratedgr. 605
Alcoholfl.oz. 16

Mix in a glass-stoppered bottle, and agitate occasionally, without warming, until the iodine is dissolved.—Germ. Pharm.

IV.

Iodingr. 730
Alcohol, to make.....fl.oz. 16

Dissolve by agitation, trituration, or other suitable means.—Homeopathic.

This is a 1x tincture from which dilutions are to be made with alcohol. See Dilutions, Homeopathic.

Tincture of Iodin, Churchill's.

Iodingr. 300
Potassium iodidgr. 60
Waterfl.oz. 1
Alcohol, to make.....fl.oz. 4

Dissolve the potassium iodide in the water, then add the iodine, and lastly, enough alcohol to make the tincture, when completed, measure 4 fluidounces.
—N. F.

This preparation should not be confounded with Solution of Iodin, Caustic, nor with Tincture of Iodin, Compound.

Tincture of Iodin, Compound.

Iodingr. 240
Potassium iodidgr. 480
Alcoholfl.oz. 16
Mix and dissolve.—U. S. P. 1870.

This must not be confused with Solution of Iodin, Compound, of the present U. S. P. It is also very similar to tincture of iodine of the Brit. Pharm. See Tincture of Iodin, No. II.

Tincture of Iodin, Decolorized or Colorless.

I.

Iodingr. 600
Sodium hyposulfitegr. 600
Waterfl.oz. 1½
Stronger ammonia water
(U. S. P.).....fl.oz. 1
Alcohol, to make.....fl.oz. 16

Digest the iodine, sodium hyposulfite, and water, at a gentle heat, until a perfect solution, of a dark reddish-brown color, is produced. Then add 2 fluidounces of alcohol, and afterwards the stronger ammonia water. Shake a few minutes until no more bubbles of gas escape, and the liquid has become colorless, with a whitish precipitate (of sulfur) suspended in it. Cool it, if necessary, and add enough alcohol to make 16 fluidounces. Place the bottle containing it in a refrigerator for a few hours, or longer if convenient, then filter, in a covered funnel, and preserve the liquid for use.

On prolonged standing a crystalline precipitate, of sodium tetrathionate, will usually form in the liquid. This may be removed by filtration.—N. F.

This preparation is almost identical with the preparation of the same name recognized by the supplement to the Germ. Pharm.; see No. II.

The stronger ammonia water should be of the strength known as 28 per cent.

The above is somewhat stronger in iodine than the official tincture of iodine, the latter containing 510 grains of iodine to the pint.

II.

Iodine	gr. 610
Sodium hyposulfite	gr. 610
Distilled water	fl.dr. 11
Ammonia water, 10 p. c.	fl.oz. 2½
Alcohol	fl.oz. 12

Mix the first three ingredients in a bottle, set this in cold water and agitate frequently until solution is effected. To this add gradually, with agitation, the ammonia water, and after several minutes add the alcohol.—Germ. Pharm., Supplement.

III. The N. F. preparation contains the iodine in the form of iodides of ammonium and sodium. Sieker has devised this formula for the expeditious preparation of a product practically the same as furnished by the N. F. formula:

Sodium iodide	gr. 360
Ammonium iodide	gr. 345
Ammonia water, 10 p. c.	m. 80
Distilled water	fl.oz. 2½
Alcohol, to make	fl.oz. 16

The product will be colorless and quite permanent, provided pure alcohol has been employed.

IV.

Iodine	gr. 208
Stronger ammonia water	sufficient
Alcohol, to make	fl.oz. 16

Dissolve the iodine in 4½ fluidounces of alcohol by the aid of agitation and a gentle heat. When cold, add the ammonia water (using 1 fluidounce of the stronger water of the Brit. Pharm.—32½ p. c.—or 9½ fluidrams of the stronger water of the U. S. P.—28 p. c.), keep

the mixture in a warm place until decolorized, after which add the remainder of the alcohol.—Brit. Form.

Tincture of Iodine, Ethereal, Magendie's.

Iodine	gr. 32
Ether	fl.oz. 1

Tincture of Iodoform.

Iodoform	gr. 600
Oil of fennel	fl.dr. 4
Alcohol	fl.oz. 7
Ether	fl.oz. 8

Dissolve the iodoform in the ether, the oil in the alcohol, and mix the solutions.—Eclectic.

Tincture of Ipecac.

Dry drug (root)	gr. 730
Distilled water	fl.oz. 3¼
Alcohol	fl.oz. 13¼
—Homeopathic.	

This is intended to make 16 fluidounces. See Tinctures, Homeopathic, for method of preparation.

This makes a 1x tincture. Dilutions are to be made from this with dispensing alcohol. See Dilutions, Homeopathic.

Tincture of Ipecac and Opium. (Dover's Tincture.)

Tinct. of deodorized opium	fl.oz. 16
Fluid extract of ipecac	fl.dr. 13
Diluted alcohol	sufficient

Evaporate the tincture in a tared dish on a water bath until it weighs 13 av. ounces. When cold add the fluid extract, filter the mixture, and through the filter add enough diluted alcohol to make 16 fluidounces of product.—U. S. P.

Tincture of Iron Acetate, Rademacher's.

I.

Iron (ferrous) sulfate, pure	gr. 656
Lead acetate, pure	gr. 684
Diluted acetic acid	fl.oz. 6
Distilled water	fl.oz. 3
Alcohol	fl.oz. 6

Triturate the two salts together to a pasty mass, introduce this into an iron vessel, add the water and acid, heat to boiling, allow to cool, transfer to a large flask, add the alcohol, set the flask, loosely stoppered, aside for several months, agitating occasionally until the

liquid has acquired a light red tint, and finally filter.—H.

A more expeditious process for making this preparation would be by the use of solution of iron tersulfate, as follows (process of Bosetti in D.):

Solution of iron tersulfate,
U. S. P.f℥.oz. 2¼
Distilled waterf℥.oz. 1½
Lead acetate, pure, crystal. .av.oz. 1¼
Diluted acetic acidf℥.oz. 5
Alcoholf℥.oz. 4¾

Dissolve the lead acetate in the acid, filter the solution, add the iron solution previously mixed with the water, then gradually add the alcohol, set aside for one or two weeks and decant the clear liquid, which is the finished product.

This makes a preparation having an odor not like that of the original, but its therapeutic value is undoubtedly the same.

II.

Solution of iron acetate....f℥.oz. 6¾
Alcoholf℥.oz. 5¾
Acetic etherf℥.oz. 3½

Mix the alcohol and ether, and gradually add the solution, taking care that the mixture remains cool.—U. S. P. 1880.

Keep the product in glass-stoppered bottles, in a cool, dark place.

This resembles the tincture of iron acetate, ethereal, of the Germ. Pharm., which see.

III.

Solution of iron acetate....f℥.oz. 4
Acetic acidf℥.dr. ¾
Alcoholf℥.oz. 4
Distilled waterf℥.oz. 7¼
—Brit. Pharm. 1885.

Tincture of Iron Acetate, Ethereal. (Klaproth's Tincture of Iron.)

Solution of iron acetate, U.
S. P.f℥.oz. 7½
Distilled waterf℥.oz. 5
Alcoholf℥.oz. 2
Acetic etherf℥.dr. 15
—Germ. Pharm. (3rd edition).

Keep protected from light in a cool place.

See also Tincture of Iron Acetate, No. II, for a similar article.

Tincture of Iron (Ferric) Chlorid. (Tincture of Iron Perchlorid, Sesquichlorid or Muriate—Chlori- nated Tincture of Iron—"Tinc- ture of Iron"—Steel Drops.)

I.

Solution of ferric chlorid...f℥.oz. 5½
Alcohol, to make.....f℥.oz. 16

Mix, allow to stand in a closely-covered vessel, protected from light, at least 3 months, then transfer to glass-stoppered bottles, and keep protected from light.

This is described as a hydro-alcoholic solution of ferric chlorid, containing about 13.28 per cent. by weight of the anhydrous salt (ferric chlorid), corresponding to about 4.6 per cent. of metallic iron.—U. S. P.

The preparation of the Brit. Pharm. is made from 1 volume each of strong solution of iron chlorid (Brit. Pharm.) and alcohol and 2 of water. The mixture is not to be put aside before use, as directed by the U. S. P. It contains about 15.4 per cent. by weight of the anhydrous salt, corresponding to about 5.3 p. c. of metallic iron.

II.

Solution of iron chlorid, U.
S. P.f℥.oz. 4¼
Alcohol, to make.....f℥.oz. 16

—Homeopathic.

This makes a 1x tincture from which 2x and higher dilutions may be made by addition of dispensing alcohol. See Dilutions, Homeopathic, for method of preparation.

Tincture of Iron Chlorid, Ethereal. (Bestucheff's Nervine Tincture— Lamotte's Golden Drops.)

Solution of iron chlorid...f℥.dr. 7½
Stronger etherf℥.oz. 4
Alcohol, to make.....f℥.oz. 16

Mix the solution of iron chlorid with 10 fluidounces of alcohol, add the ether, and lastly, enough alcohol to make 16 fluidounces. Introduce the tincture into bottles made of white (flint) glass, which should not be entirely filled. Cork them tightly and expose them to the rays of the sun, until the tincture has been completely decolorized. Then re-

move the bottles to a shady place, and open them occasionally, until the contents have again assumed a yellow color. Lastly, transfer the tincture to bottles, which should be well stoppered and kept in a cool and dark place.

Each fluidram represents about $\frac{1}{2}$ gr. of metallic iron.

This preparation is practically identical with that which is official in the Germ. Pharm.—N. F.

Tincture of Iron Chlorid, Toluened.
(Loeffler's Solution.)

Solution of ferric chlorid...fl.dr. $5\frac{1}{4}$
Toluenefl.dr. 6
Absolute alcohol, to make...fl.oz. 16

Keep in a dark colored bottle.—Cinc. Acad. Pharm.

This is used as a local application for faucial diphtheria.

See also Tincture of Iron Chlorid, Toluened, with Menthol.

Tincture of Iron Chlorid, Toluened, with Menthol. (Loeffler's Solution with Menthol.)

Solution of ferric chlorid...fl.dr. $5\frac{1}{4}$
Mentholgr. 730
Toluenefl.oz. $4\frac{3}{4}$
Absolute alcohol, to make...fl.oz. 16

Keep in a dark colored bottle.—Cinc. Acad. Pharm.

It is used as a local application for faucial diphtheria.

See also Tincture of Iron Chlorid, Toluened.

Tincture of Iron Citro-Chlorid.
(Tasteless Tincture of Chlorid of Iron—Tasteless or Creuse's Tincture of Iron.)

Solution of iron chlorid...fl.oz. $5\frac{1}{2}$
Sodium citrateav.oz. 7
Alcoholfl.oz. $2\frac{1}{2}$
Water, to make.....fl.oz. 16

Mix the solution of iron chlorid with $2\frac{1}{2}$ fluidounces of water, and dissolve in this mixture the sodium citrate with the aid of a gentle heat. Then add the alcohol, and when the solution has become cold, make up the volume with water to 16 fluidounces. Set the prod-

uct aside in a cold place for a few days, if convenient, so that the excess of saline matter may separate. Then filter, and pass enough cold water through the filter to restore the original volume.

Each fluidram contains an amount of iron equivalent to about $7\frac{1}{2}$ gr. of dry iron (ferric) chlorid.

This preparation is practically identical in the strength of iron, but not in the quantity of alcohol, with the official tincture of iron chlorid.—N. F.

This preparation may be made with citric acid and sodium bicarbonate instead of sodium citrate as follows:

Solution of iron chlorid...fl.oz. $5\frac{1}{2}$
Sodium bicarbonateav.oz. 6
Citric acidav.oz. 5
Alcoholfl.oz. $2\frac{1}{2}$
Distilled water, to make...fl.oz. 16

Dissolve the citric acid in a capacious vessel in 7 fluidounces of distilled water by the aid of heat, and add the sodium bicarbonate gradually and with occasional stirring. When all has been added and the bicarbonate is all or nearly all dissolved, apply a gentle heat until all is dissolved and there is no further disengagement of gas. To this solution add the solution of iron chlorid and the alcohol and then enough distilled water to make 16 fluidounces. Allow the mixture to stand a few days if convenient, to allow the saline matter to deposit, filter, and add through the filter enough distilled water to make the filtrate measure 16 fluidounces.

Sodium carbonate is used sometimes instead of the bicarbonate, but the latter should be preferred because more readily obtained pure.

Tincture of Iron, Compound.

Tincture of ferrated extract
of applesfl.oz. 8
Vinous tincture of rhubarb...fl.oz. 8
Tincture of nux vomica....fl.oz. 1

Tincture of Iron Pomated.

See Tincture of Ferrated Extract of Apples.

Tincture of Jaborandi. (Tincture of Pilocarpus.)**I.**

Jaborandi, No. 40 powder.....av.oz. $3\frac{1}{4}$
 Diluted alcohol, to make....fl.oz. 16
 Extract the drug by percolation.—

Brit. Pharm.

II.

Dry drug (leaves).....gr. 730
 Alcohol, to make.....fl.oz. 16
 —Homeopathic.

See Tinctures, Homeopathic, for method of preparation.

This makes a 1x tincture.

Dilutions are made from this with dispensing alcohol. See Dilutions, Homeopathic.

Tincture of Jalap.**I.**

Jalap, fine powder.....av.oz. $3\frac{1}{4}$
 Alcohol, water, each to
 makefl.oz. 16

Mix 2 volumes of alcohol with 1 of water, and percolate the jalap with this mixture, in the usual manner, until 16 fluidounces of tincture are obtained.—N. F.

II.

Jalap, No. 40 powder.....av.oz. 4
 Alcohol, water, each.....sufficient

Mix the alcohol and water in the proportion of 3 volumes of the former to 1 of the latter, moisten the drug with 2 fluidounces of this menstruum, pack in a percolator, gradually add more of the menstruum until 11½ fluidounces of percolate have been obtained, express the marc, mix the expressed liquid with the percolate, set aside for 24 hours, and filter.—Brit. Pharm.

Determine the amount of resin in the tincture and dilute the latter with the same menstruum so that 100 cc. of the diluted tincture contains 1.5 grams of resin.

III.

Jalap, coarse powder.....av.oz. $3\frac{1}{2}$
 Waterfl.oz. $4\frac{1}{2}$
 Alcoholfl.oz. 11½

Mix, macerate for 10 days, agitating occasionally, express, and filter.—Codex.

Tincture of Jalap, Compound. (Tinctura Purgans.)**I.**

Jalap, fine powder.....av.oz. 2
 Scammony, powder.....av.oz. $\frac{1}{2}$
 Alcohol, water, each to
 makefl.oz. $14\frac{1}{2}$

Mix 2 volumes of alcohol with 1 of water and use as a menstruum. Mix the powders with half their weight of sand; moisten the mixture with a sufficient quantity of the menstruum, pack it in a percolator, and percolate it with the menstruum, in the usual manner, until 14½ fluidounces of tincture are obtained.—N. F.

II. The French preparation is slightly different as follows (from the Codex):

Jalapav.oz. $1\frac{1}{4}$
 Turpeth rootgr. 70
 Scammonygr. 140
 Waterfl.oz. 5
 Alcoholfl.oz. 12

Mix, macerate for 10 days, agitating occasionally, express, and filter.

Tincture of Jamaica Dogwood. (Tincture of Piscidia.)

Dry drug (root bark).....gr. 730
 Distilled waterfl.oz. $3\frac{1}{4}$
 Alcoholfl.oz. $13\frac{1}{4}$
 —Homeopathic.

This is intended to make 16 fluidounces. See Tinctures, Homeopathic, for method of preparation.

This makes a 1x tincture, from which dilutions are to be made with dispensing alcohol. See Dilutions, Homeopathic.

Tincture of Kino.**I.**

Kinogr. 365
 Purified talcgr. 75
 Glycerinfl.oz. $2\frac{1}{2}$
 Alcoholfl.oz. $10\frac{1}{2}$
 Water, to make.....fl.oz. 16

Mix the glycerin with ¾ fluidounces of water, and triturate the kino and talcum with enough of this mixture to make a thin, smooth magma. Transfer this magma to a flask by the aid of the remainder of the mixture, and, having ascertained the weight of the flask and contents, heat it on a water bath for about one hour; allow the flask and con-

tents to cool, and restore the original weight by the addition of sufficient water. Then add the alcohol, mix well, and pass the liquid through a filter of absorbent cotton, keeping the funnel well covered. Finally, add enough alcohol through the filter to obtain 16 fluidounces of filtrate.—U. S. P.

This preparation is one-half the strength of that of the U. S. P. 1890.

The heating on the water bath is for the purpose of destroying the oxydases which are believed to cause the subsequent gelatinization of the tincture.

II. The Brit. Pharm. preparation differs from that of the U. S. P. only in using 4 fluidounces of water instead of $3\frac{1}{4}$, in mixing the glycerin and water with 8 fluidounces of alcohol, instead of $10\frac{3}{4}$, in macerating for 12 hours instead of 24, and in straining through cotton instead of filtering.

III. This is also called Tincture of Australian Red Gum:

Druggr. 730
Alcohol, to make.....fl.oz. 16
—Homeopathic.

See Tinctures, Homeopathic, for method of preparation.

This makes a 1x tincture, from which dilutions are to be made with dispensing alcohol.

The Australian or Botany Bay kino is the kind recognized by the homeopathic pharmacopeia.

Tincture of Kino, Compound.

Tincture of kino.....fl.oz. 3
Tincture of opium.....fl.oz. $1\frac{1}{2}$
Spirit of camphor.....fl.oz. 65
Oil of clovem. 11
Cochineal, powdergr. 60
Aromatic spirit of ammonia.fl.dr. 1
Diluted alcohol, to make...fl.oz. 16

Triturate the cochineal with the aromatic spirit of ammonia, and gradually add 11 fluidounces of diluted alcohol. Then add the two tinctures, the spirit of camphor, and the oil, and filter the mixture through paper. Lastly, pass enough diluted alcohol through the filter to make 16 fluidounces.—N. F.

Each fluidram represents about $\frac{1}{2}$ gr. each of kino and opium.

This preparation may be made directly from the drugs as follows:

Kinogr. 72
Opium, powdergr. 72
Clove, coarse powder.....gr. 72
Camphorgr. 50
Cochineal, powdergr. 64
Aromatic spirit of ammonia.fl.dr. 1
Alcohol, to make.....fl.oz. 16

Mix, macerate for 3 or 4 days, agitating frequently, filter, and through the filter add alcohol enough to make 16 fluidounces of filtrate.

Tincture of Lactucarium.

Lactucarium (German or English preferred).....av.oz. $8\frac{1}{4}$
Glycerinfl.oz. 4
Water, alcohol, purified petroleum benzin, and diluted alcohol, each.....sufficient

Beat the lactucarium in an iron mortar, with clean sand, to a coarse powder, and put into a suitable bottle; add 32 fluidounces of benzin, cork the bottle tightly, and set it aside for 48 hours, frequently agitating the mixture. Pour the mixture on a double filter, and allow it to drain. Wash the residue by gradually adding 24 fluidounces of benzin. Allow the lactucarium to dry by exposing it to a current of air. When it is dry, and free from the odor of benzin, reduce it to powder, using more sand, if necessary, and pack it moderately in a conical percolator. Mix the glycerin with $3\frac{1}{4}$ fluidounces of water and 8 fluidounces of alcohol, and moisten the drug with 8 fluidounces of this mixture. When the liquid begins to drop from the percolator, close the lower orifice, and having closely covered the percolator, macerate for 24 hours. Then allow percolation to proceed very slowly, gradually add, first, the remainder of the menstruum, and then diluted alcohol, until the drug is exhausted. Reserve the first 12 fluidounces of percolate, evaporate the remainder on a water bath at a temperature not exceeding 70 deg. C. to 4 fluidounces, mix this with the re-

served portion, filter, and through the filter add diluted alcohol, if necessary, to make the filtrate measure 16 fluidounces.—U. S. P.

The above makes what is called a 50 per cent. tincture. It is used only for making syrup of lacturcarium for which the fluid extract was formerly employed.

Tincture of Lavender, Comp. (Compound Spirit of Lavender, U. S. P. 1870—Lavender Drops.)

I.

Saigon cinnamon, coarse powder	av.oz.	1
Nutmeg	av.oz.	$\frac{1}{2}$
Red saunders	av.oz.	$\frac{1}{2}$
Clove	av.oz.	$\frac{1}{4}$
Oil of lavender flowers.....	fl.dr.	3
Oil of rosemary.....	m.	45
Alcohol, water, each, to make	fl.oz.	48

Dissolve the oils in 36 fluidounces of alcohol and add 12 fluidounces of water. Reduce the four drugs to No. 50 powder, and macerate this with the previously prepared liquid for 3 days, agitating occasionally. Then filter, and when the liquid has drained off completely, pass enough of a mixture of 3 volumes of alcohol and 1 of water through the residue on the filter to make 48 fluidounces of filtrate.—U. S. P.

II.

Clove, powder	av.oz.	$\frac{1}{4}$
Mace, powder	gr.	45
Red saunders, powder.....	av.oz.	$\frac{1}{2}$
Oil of lavender flowers.....	m.	45
Oil of anise.....	m.	25
Brandy	fl.oz.	1
Jamaica rum	fl.oz.	32

Mix, macerate for 14 days, agitating occasionally, express, and filter.—Eclectic.

This is claimed by Eclectics to be more agreeable than the U. S. P. preparation.

III.

Ceylon cinnamon, bruised....	gr.	180
Nutmeg, bruised	gr.	180
Red saunders	gr.	360
Oil of lavender flowers.....	m.	110
Oil of rosemary.....	m.	12
Alcohol	fl.oz.	48

Mix the solids with the alcohol, macerate for 7 days, agitating occasionally, strain with expression, filter, and add the oils.—Brit. Pharm.

Tincture of Lemon Peel.

I.

Lemon peel	av.oz.	$8\frac{1}{4}$
Alcohol, to make.....	fl.oz.	16

The lemon peel should be from the fresh fruit, and should be in thin shavings and cut into narrow shreds. Macerate it in a stoppered, wide-mouthed container, in a moderately warm place, with 16 fluidounces of alcohol during 48 hours, agitating frequently; then filter through absorbent cotton and when the liquid has drained off completely, gradually pour on alcohol enough to make 16 fluidounces of tincture, and filter the whole.—U. S. P.

This is used to make syrups.

II.

Lemon peel, fresh, cut small	av.oz.	$4\frac{1}{4}$
Alcohol	fl.oz.	16

Macerate together for 7 days, agitating occasionally, strain with expression, and filter.—Brit. Pharm.

Tincture of Linden. (Tincture of Tilia.)

Fresh drug (flowers), containing solids	gr.	730
(plant moisture.....)	av.oz.	5
Alcohol	fl.oz.	$11\frac{3}{4}$
—Homeopathic.		

This is intended to make 16 fluidounces. See Tinctures, Homeopathic, for method of preparation.

This makes a 1x tincture. Dilutions: 2x is to be made from 1 volume of tincture, 2 of distilled water, and 7 of alcohol; 3x and higher are to be made with dispensing alcohol. See Dilutions, Homeopathic.

Tincture of Lobelia.

I.

Lobelia herb, No. 50 powder	av.oz.	$1\frac{3}{4}$
Diluted alcohol, to make.....	fl.oz.	16
—U. S. P.		

Prepare like tincture of cantharides, using diluted alcohol as a menstruum.

II.

Lobelia herb, cut moderately fineav.oz. 1½
 Waterfl.oz. 3½
 Alcoholfl.oz. 13

Mix, macerate for 7 days, agitating occasionally, strain with expression, and filter.—Germ. Pharm.

III.

Lobelia, No. 40 powder...av.oz. 2
 Alcohol, water, to make...fl.oz. 16

Extract the drug by percolation, using as a menstruum a mixture of 9 volumes of alcohol and 5 of water.—Brit. Form.

IV.

Fresh drug (whole plant of
 Lobelia inflata)gr. 700
 (plant moisture .av.oz. 5)
 Alcoholfl.oz. 11¾
 —Homeopathic.

This is intended to make 16 fluid-ounces. See Tinctures, Homeopathic, for method of preparation.

This is a 1x tincture. Dilutions: 2x are to be made from 1 volume of tincture, 2 of distilled water, and 7 of alcohol; 3x and higher are to be made with dispensing alcohol. See Dilutions, Homeopathic.

V. Thomsonian:

Lobelia herb in any stage of its growth but before the leaves have become yellow, bruise, and mix with fourth-proof spirit (5 volumes of alcohol and 3 of water), macerate, and then express.

Thomson sometimes used good vinegar or pepper sauce instead of the spirit.

Tincture of Lobelia, Ethereal.

Lobelia herb, No. 40 powderav.oz. 3¼
 Spirit of ether, to make...fl.oz. 16

Extract the drug by percolation.—Brit. Pharm.

The preparation of the Brit. Pharm. 1885 was made with 2 av.ounces of drug to the pint.

See also Tinctures, Ethereal.

Tincture of Lobelia and Capsicum, Compound. (Antispasmodic Tincture.)

Lobelia herbav.oz. 1

Capsicumav.oz. 1
 Skunk cabbageav.oz. 1
 Diluted alcohol, to make...fl.oz. 16

Mix the drugs in moderately fine powder and extract by percolation or maceration.—Eclectic.

Tincture of Lobelia, Comp. (King's Expectorant Tincture.)

Lobelia herbav.oz. ¼
 Blood-rootav.oz. ¼
 Skunk cabbageav.oz. ¼
 Canada snake root.....av.oz. ¼
 Pleurisy rootav.oz. ¼
 Alcohol, water, each, to makefl.oz. 16

Mix the drugs and reduce to fine powder; mix the alcohol and water in the proportion of 3 volumes of the former to 1 of the latter, and extract the mixed drugs by percolation or maceration.

Vinegar (or diluted acetic acid) may be used instead of the water.—Eclectic.

Tincture of Lycopodium. (Tincture of Club Moss.)

Lycopodium, previously triturated many hours, to break the spores.....gr. 183
 Alcohol, to make.....fl.oz. 4
 —Homeopathic.

This makes a 1x tincture. Dilutions are to be made with dispensing alcohol. See Dilutions, Homeopathic.

To obtain satisfactory preparations of lycopodium, much time and labor must be expended to triturate the spores, that the oil contained therein may be extracted; this can be most effectually accomplished by triturating with sugar of milk. The trituration is therefore the most reliable preparation of lycopodium.

Tincture of Magnesium Chlorid.

Magnesium chlorid, dry or anhydrousgr. 46
 Dispensing alcoholfl.oz. 1
 —Homeopathic.

This forms a 1x tincture, from which dilutions are to be made with dispensing alcohol. See Dilutions, Homeopathic.

Tincture of Mary Thistle. (Tincture of St. Mary's Thistle or *Carduus Marianus*—*Tinctura Cardui Mariae*—*Stechkoerner Tinktur.*)

I. Rademacher's (in H. and D.):

Carduus Marianus fruit,
wholeav.oz. 10
Alcoholfl.oz. 11½
Distilled waterfl.oz. 9½
Macerate for 8 days, agitating occasionally, then filter.

The fruit is extracted in the whole condition, owing to its highly mucilaginous character.

II. A homeopathic tincture is made as follows:

Whole ripe seed.....part 1
Diluted alcoholparts 2

Mix, let stand in a well-stoppered bottle in a cool place for 8 days, agitate twice daily, and filter. All parts are parts by weight.

It will be observed that the two preparations are practically identical.

Tincture of Matico.

Matico, No. 40 powder....av.oz. 1½
Diluted alcohol, to make....fl.oz. 14½
Moisten the drug with 13 fluidrams of diluted alcohol, macerate for 24 hours, pack firmly in a cylindrical percolator, and pour on diluted alcohol until 14½ fluidounces of percolate are obtained.—N. F. Appendix and U. S. P. 1890.

Tincture of May-Apple. (Tincture of Mandrake or *Podophyllum.*)

I.
Resin of *podophyllum*.....gr. 256
Alcohol, enough to make...fl.oz. 16

Add the resin to 14½ fluidounces of alcohol, set aside for 24 hours, occasionally agitating, filter, and add enough alcohol through the filter to make the filtrate measure 16 fluidounces.—Brit. Pharm. 1885.

This contains twice the proportion of resin present in the preparation of the Brit. Pharm. 1885.

II.
Podophyllum, fine powder.av.oz. 3
Alcohol, to make.....fl.oz. 16
Extract the drug by percolation or maceration.—Eclectic.

III.

Fresh drug (root) containing solidsgr. 730
(plant moisture..av.oz. 5¾)
Alcoholfl.oz. 11
—Homeopathic.

This is intended to make 16 fluidounces. See Tinctures, Homeopathic, for method of preparation.

This makes a 1x tincture. Dilutions: 2x is to be made from 1 volume of tincture, 3 of distilled water, and 6 of alcohol. See Dilutions, Homeopathic.

Tincture of Mercuric Chlorid. (Tincture of *Mercurius Corrosivus.*)

Mercuric chloridgr. 46
Alcoholfl.oz. 1
—Homeopathic.

This is a 1x tincture, from which dilutions are made with dispensing alcohol. See Dilutions, Homeopathic.

Tinctures, Mother.

The term "mother tinctures" was formerly used in homeopathic works but has been abandoned in the later works of authority in favor of the simple term "tinctures." Commercially, however, the term is still used and signifies the basic preparations, usually of crude drugs, from which the dilutions ("attenuations" or "potencies") are to be prepared. Directions for preparing each tincture are given in this work in its proper alphabetical place while the general directions for this class of tinctures is given under Tinctures, Homeopathic, which see. For preparing the dilutions, see Dilutions, Homeopathic.

Tincture of Mugwort Root, Rademacher's. (Tincture of *Artemisia.*)

Mugwort root, cut.....av.oz. 3
Alcoholfl.oz. 8¾
Waterfl.oz. 7

Mix, digest for 3 days, express, and filter.—H.

Tincture of Musk. (*Tinctura Moschi.*)

I.
Muskgr. 92
Alcoholfl.dr. 14½
Waterfl.dr. 14½
Diluted alcohol, to make...fl.oz. 4
Triturate the musk with the water, a

little at a time, until a smooth mixture is obtained; transfer this to a bottle and allow it to stand 24 hours; add the alcohol and macerate for 6 days, agitating occasionally. Then filter through a plain paper filter, and when the liquid has drained off completely, pass enough diluted alcohol through the filter to make 4 fluidounces of filtrate.—U. S. P.

The musk used for this preparation should be of first-class quality; the numerous inferior grades are useless for medicinal effect.

II.

Musk	gr. 132
Distilled water	fl.oz. $7\frac{1}{4}$
Alcohol	fl.oz. $8\frac{1}{2}$

Triturate the musk with the water, add the alcohol.—Germ. Pharm. 3rd edition.

Tincture of (White) Mustard. (Tincture of *Sinapis Alba*.)

Drug (the fresh ripe seed).gr.	730
Alcohol, to make.....fl.oz.	16

—Homeopathic.

See Tinctures, Homeopathic, for method of preparation. This makes a 1x tincture, from which dilutions are to be made with dispensing alcohol. See Dilutions, Homeopathic.

Tincture of Myrrh.

I.

Gum myrrh, moderately coarse powder	av.oz. $3\frac{1}{4}$
Alcohol, to make.....fl.oz.	16

Macerate the drug in a stoppered container, in a moderately warm place, during 3 days, agitating frequently; then filter through absorbent cotton, or a plain paper filter, and, when the liquid has drained off completely, pour on enough alcohol to make 16 fluidounces of filtrate.—U. S. P.

II. The preparation of the Brit. Pharm. is of the same strength; the maceration is for 7 days.

III.

Myrrh	av.oz. $1\frac{1}{2}$
Alcohol, enough to make...fl.oz.	16

—Eclectic (old formula).

IV.

Myrrh, coarse powder.....av.oz.	$2\frac{1}{2}$
Alcohol	fl.oz. $14\frac{1}{2}$

—Germ. and Austr. Pharms.

Tincture of Myrrh, Compound. (Hot Drops.)

Myrrh, moderately fine powder	av.oz. 1
Capsicum, fine powder.....av.oz.	$\frac{1}{4}$
Alcohol, to make.....fl.oz.	16

—Eclectic.

Prepare the tincture by percolation or maceration.

This is a variation of the Thomsonian No. 6; see Tincture of Capsicum and Myrrh.

Tinctures, Normal.

The use of the term "normal" as applied to tinctures is confined to Eclectic pharmacy, and it signifies that the product, the "normal tincture," represents the dry drug weight for weight. They may be prepared from fresh or from dry drugs or by the use of a greater or less proportion of alcohol in the menstruum, but the strength of the product is always based upon the drug in a dry condition. In the case of the tinctures prepared from dry drugs, the menstruum varies according to the nature of the drug, but in the case of the tinctures of fresh drugs, the drug is dried partially, if necessary, and alcohol and water added in such proportions that the product will contain 50 p. c. of alcohol. Good fluid extracts may always be dispensed in place of the corresponding "normal tinctures."

Normal tinctures are designated by Eclectics for brevity's sake, as "tinctures $\frac{n}{i}$." Tinctures one-half the strength of normal tinctures are called semi-normal $\frac{n}{2}$; one-fifth as quinti-normal $\frac{n}{5}$; one-tenth as deci-normal $\frac{n}{10}$, etc.

Tincture of Nutgall. (Tinctura *Gal-læ* or *Gallarum*—Tincture of Galls.)

I.

Nutmall, No. 40 powder....av.oz.	$3\frac{1}{4}$
Glycerin	fl.dr. 13
Alcohol, to make.....fl.oz.	16

Mix the glycerin with 14½ fluidounces of alcohol. Introduce the drug, without moistening it, into a glass percolator, shaking down the powder evenly and compactly, and pour on enough of the menstruum to saturate it and leave a stratum above it. Allow percolation to proceed slowly, pouring on, first, the remainder of the menstruum, and then enough alcohol to make 16 fluidounces of percolate.—U. S. P.

II.

Nutgall, No. 12 powder....av.oz. 3
Waterfl.oz. 3½
Alcoholfl.oz. 13

Mix, macerate for 7 days, agitating occasionally, strain with expression, and filter.—Germ. and Austr. Pharms.

Tincture of Nutmeg. (Tincture of Nux Moschata.)

Dry drug (seed, coarse powder)gr. 730
Alcohol, to make.....fl.oz. 16
—Homeopathic.

See Tinctures, Homeopathic, for method of preparation.

This makes a 1x tincture. Dilutions are to be made with dispensing alcohol. See Dilutions, Homeopathic.

Tincture of Nux Vomica. (Tinctura Strychni—Tincture of Poison Nut—Tinctura Nucum Vomicularum.)

I.

Extract of nux vomica (containing 5 p. c. of strychnine)gr. 146
Alcohol, water, each, to makefl.oz. 16

Mix alcohol and water in the proportion of 3 volumes of the former to 1 of the latter, and in this mixture dissolve the extract, using enough of the liquid to make 16 fluidounces, and filter this in a well-covered funnel.—U. S. P.

This tincture, when assayed, should contain 1 gm. of strychnine in 1000 cc.

II. Rademacher's:

Nux vomica, rasped or gratedav.oz. 3
Waterfl.oz. 7
Alcoholfl.oz. 8¼

. Mix, digest for 3 days, express, and filter.—H.

Inasmuch as this is of approximately the same relative strength as the U. S. P. preparation, and, as the latter is a superior preparation, it should always be dispensed for the Rademacher preparation.

III.

Fluid extract of nux vomica,

Brit. Pharm.fl.oz. 2
Distilled waterfl.oz. 3
Alcoholfl.oz. 7

Mix the extract with the water, add the alcohol, and filter.—Brit. Pharm.

This contains about twice the proportion of strychnine present in the Brit. Pharm. 1885.

IV.

Nux vomica, coarse powd..av.oz. 1½
Distilled waterfl.oz. 3½
Alcoholfl.oz. 13

Mix, macerate for 7 days, agitating occasionally, strain with expression, and filter.—Germ. Pharm.

V.

Dry drug (seed, coarse powder)gr. 730
Distilled waterfl.oz. 3¼
Alcoholfl.oz. 13¼
—Homeopathic.

This is intended to make 16 fluidounces. See Tinctures, Homeopathic, for method of preparation.

This makes a 1x tincture, from which dilutions are to be made with dispensing alcohol. See Dilutions, Homeopathic.

Tincture of Oats.

See Tincture of Avena Sativa.

Tincture of Opium. (Laudanum—Tinctura Opii Simplex—Tinctura Thebaica or Meconii.)

I.

Opium, granulated (containing 12 to 12.5 p. c. of crystallizable morphine)gr. 730
Alcohol, water, diluted alcohol, to makefl.oz. 16

Heat 6½ fluidounces of water to boiling and pour it upon the opium contained in a tared vessel, weigh, and stir occasionally during 12 hours; then restore the original weight by the addi-

tion of cold water, add 6½ fluidounces of alcohol, pour the mixture into a bottle, and continue the maceration for 48 hours, occasionally shaking. Transfer the mixture to a percolator, return the first portion of the percolate until it runs through clear, and, when the liquid ceases to drop, continue the percolation with enough diluted alcohol to make 16 fluidounces of percolate.—U. S. P.

This tincture, when assayed, should contain not less than 1.2 nor more than 1.25 gm. of crystallizable morphine in 100 cc.

This tincture was formerly made from powdered opium.

II.

Opiumav.oz. 2½
Alcoholfl.oz. 8
Distilled waterfl.oz. 8
Diluted alcoholsufficient

Triturate the opium to a paste with the water, previously heated to about 95 deg. C., set aside for 6 hours, add the alcohol, mix thoroughly, set aside in a covered vessel for 24 hours, strain, express the residue, mix the liquids, set aside for 24 hours, and filter.—Brit. Pharm.

Determine the proportion of morphine present in this tincture and then dilute it with diluted alcohol so that the diluted tincture will contain ¾ gram of morphine (anhydrous) in each 100 cc.

III.

Opium, moderately fine powderav.oz. 1¾
Alcoholfl.oz. 7
Distilled waterfl.oz. 10

Mix, macerate for 7 days, agitating occasionally, and filter.—Germ. Pharm.

The product should contain about 1 per cent. of morphine.

IV.

The preparation of the U. S. P. is the equivalent of the homeopathic tincture. This is a 1x tincture. Dilutions: 2x is to be made from 1 volume of tincture, 4 of distilled water, and 5 of alcohol; 3x and higher are to be made

with dispensing alcohol. See Dilutions, Homeopathic.

Tincture of Opium, Acetated.

Opium, powdergr. 600
Diluted acetic acid.....fl.oz. 8
Alcohol, to make.....fl.oz. 16

Make the opium and acid into an intimate mixture, add 8 fluidounces of alcohol, shake well, macerate for 48 hours, filter, and through the filter add enough alcohol to make 16 fluidounces of filtrate.—Eclectic.

Tincture of Opium, Ammoniated.

Tincture of opium, of the
Brit. Pharm.fl.oz. 2
Benzoic acidgr. 125
Oil of anisem. 40
Ammonia water, 10 p. c....fl.dr. 21
Alcohol, to make.....fl.oz. 13½

Dissolve the oil and acid in 8¾ fluidounces of alcohol, add the tincture and water, mix well, filter, and add enough alcohol through the filter to make the filtrate measure 13½ fluidounces.—Brit. Pharm.

This equals approximately 5 gr. of opium to the fluidounce.

The preparation of the Brit. Pharm. 1885 was somewhat different, as follows:

Opiumgr. 84
Spanish saffrongr. 150
Benzoic acidgr. 150
Oil of anisem. 48
Stronger ammonia water,
32½ p. c.....fl.oz. 3¼
Alcoholsufficient

Mix the first five ingredients with 13 fluidounces of alcohol, macerate for 7 days, agitating occasionally, express, filter, and add enough alcohol to the filtrate to make 16 fluidounces.

Tincture of Opium, Camphorated. (Paregoric — Paregoric Elixir — Benzoated or Anisated Tincture of Opium—Compound Tincture of Camphor.)

I.

Opium, powder (U. S. P.)...gr. 60
Benzoic acidgr. 60
Camphorgr. 60
Oil of anise.....fl.dr. 1
Glycerinfl.dr. 10
Diluted alcoholfl.oz. 30

Place all the ingredients in a stop-

pered container, and macerate for 3 days, shaking frequently, then filter in a well-covered paper filter, adding through the filter enough diluted alcohol to make 32 fluidounces of filtrate.—U. S. P.

This preparation may be made extemporaneously by substituting 10 fluidrams each of tincture of opium and spirit of camphor for the opium and camphor in the above.

II. The preparation of the Brit. Pharm., called "compound tincture of camphor," is as follows:

Tincture of opium, of the Brit. Pharm.	m. 470
Benzoic acid	gr. 34
Camphor	gr. 25
Oil of anise.....	m. 24
Water, alcohol, each, to make	fl.oz. 16

Use a mixture of 4 volumes of water and 7 of alcohol as the solvent, dissolve the acid, camphor and oil in 14½ fluidounces of this mixture, add the tincture, and then of the same mixture of alcohol and water to make 16 fluidounces, and filter if necessary.

This preparation contains in each fluidram a proportion of tincture of opium (Brit. Pharm.) equivalent to about 1/30 gr. of morphine hydrochlorid or to ¼ gr. of opium (containing 10 p. c. of anhydrous morphine).

III. The preparation of the Germ. Pharm. called benzoated tincture of opium is as follows:

Opium, No. 80 powder.....	gr. 34
Oil of anise.....	m. 35
Camphor	gr. 68
Benzoic acid	gr. 135
Water	fl.oz. 3½
Alcohol	fl.oz. 12¾

Mix, macerate for 7 days, agitating occasionally, and filter.

Tincture of Opium, Compound.

This is the same as Squibb's cholera mixture. See Mixtures, Cholera, No. XII.

Tincture of Opium, Crocated. (Tinctura Opii Crocata—Saffronized Tincture of Opium—Tincture of Opium and Saffron—Sydenham's Laudanum—Compound or Aromatic Wine of Opium.)

Opium, moderately fine powder	av.oz. 1¾
Spanish saffron	gr. 255
Clove, cut moderately fine...	gr. 105
Cassia bark, coarse powder...	gr. 105
Alcohol	fl.oz. 7
Water	fl.oz. 10

Macerate the saffron with the mixed alcohol and water for one day, agitating occasionally, strain with expression, in the colature macerate the other drugs for 3 days, agitating occasionally, express and filter.—Germ. Pharm.

Wine of opium, which see, is closely related to the above.

Tincture of (Deodorized) Opium.

Opium, granulated (containing 12 to 12.5 p. c. of crystallizable morphine).....	gr. 730
Purified petroleum benzin.....	fl.oz. 10
Alcohol	fl.oz. 3¾
Water, to make.....	fl.oz. 16

Heat 8 fluidounces of water to boiling and pour it upon the opium contained in a suitable vessel, stirring the mixture frequently during 24 hours. Then transfer the mixture to a percolator, return the first portion of the percolate until it runs through clear, and, when the liquid ceases to drop, continue the percolation with water until the opium is exhausted. Concentrate the percolate by evaporation on a water bath until it measures 2½ fluidounces, and, when cooled, shake it frequently and vigorously for 10 minutes with 1 fluidounce of purified benzin. Separate the benzin, repeat the shaking out for a few minutes with the remainder of the benzin, and, having carefully and completely separated this second portion of benzin, evaporate the remaining liquid in a warm place spontaneously, until the odor of benzin has disappeared, removing the last traces by the heat of a water bath. Mix the deodorized liquid so obtained with 9½ fluidounces of water, filter the mixture through a paper filter, and hav-

ing mixed the alcohol with the filtrate, wash the filter with enough water to make 16 fluidounces of filtrate.—U. S. P.

The product, when assayed, should contain not less than 12 nor more than 12.5 gm. of crystallizable morphine in 100 cc.

Tincture of Opium, Muriated.

Opium, powderav.oz. 1
Hydrochloric acidfl.oz. 1
Waterfl.oz. 15

Mix, macerate for 14 days, agitating frequently, filter, and add water through the filter to make 16 fluidounces.—Eclectic.

Tincture of Orange.

I.

Bitter orange peel, fresh, cut smallav.oz. 4¼
Alcoholfl.oz. 16

Mix, macerate for 7 days, agitating occasionally, strain with expression, and filter.—Brit. Pharm.

See also Tincture of (Bitter) Orange Peel.

II.

Bitter orange peel, cut moderately finefl.oz. 3
Waterfl.oz. 3½
Alcoholfl.oz. 13

Mix, macerate for 7 days, agitating occasionally, strain with expression, and filter.—Germ. Pharm.

See also Tincture of (Bitter) Orange Peel.

Tincture of (Bitter) Orange Peel. (Tincture of Orange, Brit. Pharm. and U. S. P. 1870.)

Bitter orange peel, No. 40 powderav.oz. 3¼
Alcohol, water, each, to makefl.oz. 16

Prepare like tincture of calendula, using a mixture of 3 volumes of alcohol and 2 of water as a menstruum.—U. S. P.

See also Tincture of Orange.

Tincture of (Sweet) Orange Peel.

Sweet orange peel.....av.oz. 8¼
Alcohol, to make.....fl.oz. 16

The orange peel should be from the fresh fruit, in thin shavings, and cut into narrow shreds. Macerate it in a

stoppered wide-mouthed container and in a moderately warm place, with 16 fluidounces of alcohol, during 48 hours, agitating frequently; then filter through absorbent cotton, and when the liquid has drained off completely, gradually pass enough alcohol through the residue to make 16 fluidounces of tincture; finally, filter it through paper.—U. S. P.

Tincture of Pareira.

Dry drug (root)gr. 730
Distilled waterfl.oz. 4¾
Alcoholfl.oz. 11¾
—Homeopathic.

This is intended to make 16 fluidounces. See Tinctures, Homeopathic, for method of preparation.

This makes a 1x tincture. Dilutions: 2x is to be made from 1 volume of tincture, 2 of distilled water, and 7 of alcohol; 3x and higher are to be made with dispensing alcohol. See Dilutions, Homeopathic.

Tincture of Parsley. (Tincture of Petroselinum.)

Fresh drug (whole plant), containing solidsgr. 730
(plant moisture, av.oz. 7½)
Alcoholfl.oz. 9½
—Homeopathic.

This is intended to make 16 fluidounces. See Tinctures, Homeopathic, for method of preparation.

This makes a 1x tincture. Dilutions: 2x is to be made from 1 volume of tincture, 4 of distilled water, and 5 of alcohol; 3x and higher are to be made with dispensing alcohol. See Dilutions, Homeopathic.

Tincture of Passion Flower. (Tincture of Passiflora.)

Fresh drug (leaves of the plants growing on the uplands), containing solids...gr. 730
(plant moisture, av.oz. 6⅔)
Alcoholfl.oz. 10¼
—Homeopathic.

This is intended to make 16 fluidounces. See Tinctures, Homeopathic, for method of preparation.

This makes a 1x tincture. Dilutions: 2x is to be made from 1 volume of tincture, 3 of distilled water, and 6 of

alcohol; 3x and higher are to be made with dispensing alcohol. See Dilutions, Homeopathic.

Tincture, Pectoral. (Guttæ Pectorales—Pectoral Drops—Bateman's Pectoral Drops.)

Tincture of opium.....m.	320
Compound tincture of gambir (catechu).....fl.oz.	1
Spirit of camphor.....fl.dr.	5
Oil of anise.....m.	8
Caramel.....fl.dr.	2
Diluted alcohol, to make...fl.oz.	16

Mix the first five ingredients with enough diluted alcohol to make 16 fluidounces, and filter.

Each fluidram contains $2\frac{1}{2}$ m. of tincture of opium.—N. F.

The formula adopted by the Philadelphia College of Pharmacy is as follows:

Opium, powder.....gr.	30
Catechu, powder.....gr.	30
Camphor.....gr.	30
Red saunders, rasped.....gr.	30
Oil of anise.....drops	10
Diluted alcohol.....fl.oz.	$16\frac{3}{4}$

Macerate the saunders with the diluted alcohol for 24 hours, agitating occasionally, filter, add the other ingredients, macerate for 10 days, agitating occasionally, and filter.

Tincture of Pellitory. (Tincture of Pyrethrum.)

Pellitory, No. 50 powder..av.oz.	$3\frac{1}{4}$
Alcohol, to make.....fl.oz.	16

Prepare like tincture of calendula.—U. S. P.

The preparation of the Brit. Pharm. is made with a menstruum composed of 3 volumes of alcohol and 1 of water.

Tincture of Pennyroyal. (Tincture of Hedeoma.)

Fresh drug (whole plant), containing solids.....gr.	730
(plant moisture, av.oz.)	5
Alcohol.....fl.oz.	$11\frac{3}{4}$

—Homeopathic.

This is intended to make 16 fluidounces. See Tinctures, Homeopathic, for method of preparation.

This is a 1x tincture. Dilutions: 2x is to be made from 1 volume of tincture, 2 of distilled water, and 7 of alcohol; 3x and higher are to be made with dis-

pensing alcohol. See Dilutions, Homeopathic.

Tincture of Peppermint. (Tincture of Mentha Piperita.)

Fresh drug (whole plant), containing solids.....gr.	730
(plant moisture, av.oz.)	$6\frac{2}{3}$
Alcohol.....fl.oz.	$10\frac{1}{4}$

—Homeopathic.

This is intended to make 16 fluidounces. See Tinctures, Homeopathic, for method of preparation.

This is a 1x tincture. Dilutions: 2x is to be made from 1 volume of tincture, 3 of distilled water, and 6 of alcohol; 3x and higher are to be made with dispensing alcohol. See Dilutions, Homeopathic.

Tincture of Phosphorus.

Take of phosphorus an excess (15 grains or more) and introduce this into a flask containing 16 fluidounces of alcohol. Heat on a water bath until the phosphorus is melted, then shake vigorously until any excess of the phosphorus is solidified.—Homeopathic.

This saturated solution will equal in drug strength about 1 part in 667. To compensate for loss by oxidation, and so retain the full strength of the solution, a small piece of phosphorus should be kept in each bottle containing the tincture, the same to be renewed whenever it becomes coated with the amorphous variety.

The spirit of phosphorus U. S. P. is one-fourth weaker than the above (1 in 833).

Dilutions: 3x is made by mixing 2 volumes of tincture with 1 of alcohol (or 4 volumes of U. S. P. spirit with 1 of alcohol); 4x and higher are to be made with alcohol. See Dilutions, Homeopathic.

Tincture of Phosphorus, Compound.

Phosphorus.....gr.	10
Chloroform.....fl.oz.	2
Absolute alcohol.....fl.oz.	10

Place the phosphorus with the chloroform in a stoppered bottle, apply the heat of a water bath until dissolved, and

then add this to the alcohol, and shake well.

This tincture should be protected from the light, in accurately stoppered bottles. It deteriorates if long kept.

Each fluidram contains about 1/10 gr. of phosphorus.—Brit. Form.

Tincture of Pimpinella.

Pimpinella rootav.oz. 2¾
Alcohol, water, each, to
makefl.oz. 16

Mix 2 volumes of alcohol with 1 of water. Macerate the drug, reduced to a moderately coarse (No. 40) powder, with enough of the menstruum to keep it distinctly damp during 12 hours. Then percolate it with the same menstruum, in the usual manner, until 16 fluidounces of tincture are obtained.

This preparation is approximately of the same strength as that which is official in the Germ. Pharm.—N. F.

The latter preparation is made by macerating 3 av.ounces of pimpinella, cut moderately fine, for 7 days with 3½ fluidounces of water and 13 fluidounces of alcohol, straining with expression, and filtering.

Tincture of Plantain. (Tincture of Plantago.)

Fresh drug (whole plant),
containing solidsgr. 730
(plant moisture, av.oz. 5.6)
Alcoholfl.oz. 11
—Homeopathic.

This is intended to make 16 fluidounces. See Tinctures, Homeopathic, for method of preparation.

This makes a 1x tincture. Dilutions: 2x is to be made from 1. volume of tincture, 3 of distilled water, and 6 of alcohol; 3x and higher are to be made with dispensing alcohol. See Dilutions, Homeopathic.

Tincture of Pleurisy Root. (Tincture of Butterfly Weed or Asclepias Tuberosa.)

Fresh drug (root), contain-
ing solidsgr. 730
(plant moisture, av.oz. 3.9)
Distilled waterfl.oz. 2¾
Alcoholfl.oz. 10¼
—Homeopathic.

This is intended to make 16 fluidounces. This is a 1x tincture. See Tinctures, Homeopathic, for method of preparation.

Dilutions: 2x are to be made from 1 volume of tincture, 3 of distilled water, and 6 of alcohol; 3x and higher are to be made with dispensing alcohol. See Dilutions, Homeopathic.

Tincture of Podophyllin.

There are several formulas. Martindale (Extra Pharmacopeia) mentions the following:

I. Dobell's:

Podophyllingr. 1
Tincture of ginger.....fl.dr. 1
Alcohol, to make.....fl.oz. 1

The dose is a teaspoonful in water at bed-time, every night or every second, third, or fourth night, as required. This is reputed to act more satisfactorily than podophyllin in pills.

II. Ringer's:

Podophyllingr. 1
Alcoholfl.dr. 1

This dose is 2 to 4 drops in tea or coffee, taken night and morning, and is useful in sick headache and biliousness, where the bowels and liver are sluggish, in worried and overworked patients, and in chronic diarrhea with cutting pains and high-colored stools. The taste is acrid and disagreeable.

III. Ammoniated Tincture:

Podophyllingr. 1
Aromatic spirit of ammonia..fl.dr. 1

The dose is 2 to 6 minims as an alterative, 10 to 20 minims as a purgative and cholagogue, taken in a wineglassful of water or milk. Podophyllin will dissolve perfectly in the spirit. This tincture has the advantage that it can be mixed with water, without causing the resin to separate. The vehicle also acts as a corrective.

Tincture of Podophyllum.

See Tincture of May Apple.

Tincture of Poison Ivy. (Tincture of Poison Oak or Rhus Toxicodendron—Tincture of Toxicodendri.)

I.

Poison ivy, fresh leaves....av.oz. 8
Alcoholfl.oz. 6

Macerate for 14 days, express and filter in a well-covered funnel.—Eclectic.

This should be preserved in well-stoppered vials.

II.

Fresh drug (leaves), containing solidsgr. 730.
(plant moisture, av.oz. $3\frac{1}{3}$)
Alcoholfl.oz. $13\frac{1}{4}$
—Homeopathic.

This is intended to make 16 fluid-ounces. See Tinctures, Homeopathic, for method of preparation.

This makes a 1x tincture, from which dilutions are to be made with dispensing alcohol. See Dilutions, Homeopathic.

Great care must be exercised in handling this drug. The tincture also poisons the skin and it also should be handled with great care.

Tincture of Poke. (Tincture of Phytolacca.)

Poke root, recently dried, fine powderav.oz. 3
Diluted alcohol, to make....fl.oz. 16

Extract the drug by percolation or maceration.—Eclectic.

Tincture of Poke, Compound.

This formula has been recommended and used:

Fluid ext. of poke root.....fl.oz. 3
Tincture of cardamom.....fl.dr. 10
Diluted alcohol, to make....fl.oz. 16

Tincture of Poppy. (Tinctura Papaveris.)

Poppy capsules, freed from seeds, in coarse powder..av.oz. $8\frac{3}{4}$
Glycerinfl.oz. 2
Alcohol, water, each, to makefl.oz. 16

Digest the poppy capsules with 48 fluidounces of boiling water during 2 hours, then express and strain. Evaporate the strained liquid to 8 fluidounces, mix it with 4 fluidounces of alcohol, and set the mixture aside, well covered, until it is quite cold. Then filter, add the glycerin to the filtrate, and pass enough of a mixture of 2 volumes of water and 1 of alcohol through the filter to make the product measure 16 fluid-ounces.

Each fluidram represents 30 gr. of poppy capsule freed from seeds.—N. F.

This is used for making syrup of poppy.

Tincture of Prickly-Ash Berries.

Prickly-ash berries, fine powderav.oz. 4
Diluted alcohol, to make....fl.oz. 16

Extract the drug by percolation or maceration.—Eclectic.

Tincture of Prickly-Elder. (Tinctura Araliæ Spinosæ.)

Prickly-elder bark, fine powderav.oz. 3
Diluted alcohol, to make....fl.oz. 16

Make into a tincture by percolation or maceration.—Eclectic.

Tincture of Puff Ball. (Tincture of Bovista.)

The ripe fungus, in dry powdergr. 730
Distilled waterfl.oz. $6\frac{1}{2}$
Alcoholfl.oz. $10\frac{1}{4}$
—Homeopathic.

This is intended to make 16 fluid-ounces. This makes a 1x tincture. See Tinctures, Homeopathic, for method of preparation.

Dilutions are to be made with dispensing alcohol. See Dilutions, Homeopathic.

Tincture of Pulsatilla.

I.

Pulsatilla herb, fresh.....av.oz. 8
Absolute alcohol, to make..fl.oz. 16

Extract the drug by percolation or maceration.

II. Homeopathic formula (from the American Homeopathic Pharmacopœia):

The fresh plant, gathered when in flower, is chopped and pounded to a pulp and weighed. Then two parts by weight of alcohol are taken, the pulp mixed thoroughly with one-sixth part of it, and the rest of the alcohol added. After having stirred the whole, pour it into a well-stoppered bottle, and let it stand 8 days in a dark, cool place. The tincture is then separated by decanting, straining and filtering.

III.

Pulsatilla, No. 20 powder....gr. 730

Alcohol, water, each, to
makefl.oz. 16

Extract the drug by percolation with
a mixture of 9 volumes of alcohol with
5 of water.—Brit. Form.

Tincture of Quassia.

I.

Quassia, No. 50 powder...av.oz. 3¼

Alcohol, water, each, to
makefl.oz. 16

Prepare like tincture of black cohosh,
using as a menstruum a mixture of 7
volumes of alcohol and 13 of water.—
U. S. P.

II.

Quassia, raspedgr. 730

Diluted alcoholfl.oz. 16

Mix, macerate for 7 days, agitating
occasionally, strain with expression, and
filter.—Brit. Pharm.

Tincture of Quinine.

Quinine hydrochloridgr. 145

Tincture of orange.....fl.oz. 16

Mix and dissolve.—Brit. Pharm.

Tincture of Quinine, Ammoniated.

Quinine sulfategr. 145

Ammonia waterfl.dr. 13

Distilled waterfl.oz. 5¼

Alcoholfl.oz. 9¼

Mix the ammonia water, water and
alcohol, add the quinine salt, shake until
a clear solution is obtained, set aside
for 3 days, and filter.—Brit. Pharm.

Tincture of Quinine, Compound.**(Ague Bitters.)**

Quinine (alkaloid)gr. 30

Potassium bitartrateav.oz. 1

Clove, powderav.oz. 1

Diluted alcoholfl.oz. 16

Macerate for 24 hours, occasionally
agitating, and filter.—Eclectic.

**Tincture of Red Clover. (Tincture
of Trifolium Pratense.)**

Fresh drug (flower-heads),
containing solidsgr. 730

(plant moisture, av.oz. 5)

Alcoholfl.oz. 11¾

—Homeopathic.

This is intended to make 16 fluid-
ounces. See Tinctures, Homeopathic,
for method of preparation.

This makes a 1x tincture. Dilutions:
2x is to be made from 1 volume of
tincture, 2 of distilled water, and 7 of
alcohol; 3x and higher are to be made
with dispensing alcohol. See Dilutions,
Homeopathic.

**Tincture of Rhatany. (Tincture of
Krameria—Tinctura Ratanhia.)**

I.

Krameria, No. 40 powder...av.oz. 3¼

Diluted alcohol, to make....fl.oz. 16

Prepare like tincture of calendula,
using diluted alcohol as a menstruum.—
U. S. P.

II. The preparation of the Brit.
Pharm. is made with a mixture of 7
volumes of alcohol and 4 of water. The
drug strength is the same as that of the
U. S. P.

III.

Rhatany, cut moderately

fineav.oz. 3

Waterfl.oz. 3½

Alcoholfl.oz. 13

Mix, macerate for 7 days, agitating
occasionally, strain with expression, and
filter.—Germ. and Austr. Pharms.

IV.

Dry drug (root).....gr. 730

Distilled waterfl.oz. 8

Alcoholfl.oz. 8. fl.dr. 5

—Homeopathic.

This is intended to make 16 fluid-
ounces. See Tinctures, Homeopathic,
for method of preparation.

This makes a 1x tincture. Dilutions:
1x is to be made from 1 volume of
tincture, 4 of distilled water, and 5 of
alcohol; 3x and higher are made with
dispensing alcohol. See Dilutions, Ho-
meopathic.

Tincture of Rhubarb.

I.

Rhubarbav.oz. 3¼

Cardamomgr. 290

Glycerinfl.dr. 13

Alcohol, water, each to
makefl.oz. 16

Mix the glycerin with 8 fluidounces
of alcohol and 6½ fluidounces of water.
Reduce the drugs to No. 40 powder and
moisten with 1½ fluidounces of men-

struum; transfer it to a percolator, and, without pressing the drug, allow it to stand, well covered, for 12 hours; then pack it moderately and pour on enough menstruum to saturate the drug and leave a stratum above it. When the liquid begins to drop from the percolator, close the lower orifice, and macerate for 24 hours. Then allow percolation to proceed slowly, pouring on, first, the remainder of the menstruum, and then enough of a mixture of 5 volumes of alcohol and 4 of water to make 16 fluidounces of tincture.—U. S. P.

This preparation is twice the strength of that of the U. S. P. 1890.

II. The closely related preparation of the Brit. Pharm. is called compound tincture of rhubarb. See Tincture of Rhubarb, Compound.

III.

Dry drug	gr. 730
Distilled water	f.oz. 6½
Alcohol	f.oz. 10¼

—Homeopathic.

This is intended to make 16 fluidounces. See Tinctures, Homeopathic, for method of preparation.

This is of the same strength as the U. S. P. tincture but contains neither cardamom nor glycerin. It is a 1x tincture from which a 2x dilution is to be made by mixing 1 volume of tincture with 3 of distilled water and 6 of alcohol; 3x and higher dilutions are to be made with dispensing alcohol. See Dilutions, Homeopathic.

Tincture of Rhubarb, Aqueous.

(Alkaline Infusion of Rhubarb.)

I.

Rhubarb	gr. 720
Borax	gr. 72
Potassium carbonate	gr. 72
Cinnamon water	f.oz. 2
Alcohol	f.oz. 1¾
Water, to make	f.oz. 16

Dissolve the borax and potassium carbonate in 12 fluidounces of water, and macerate in this solution, during 24 hours, the rhubarb, cut into thin slices and carefully freed from any adhering fine powder. Then strain it through

muslin, heat the strained liquid to boiling, add the cinnamon water and alcohol, stir it well and filter, while warm, in a covered funnel. To the cold filtrate add enough water to make the product measure 16 fluidounces.

Each fluidram represents about 5¾ gr. of rhubarb.

The product is practically identical with that obtained by the process of the Germ. Pharm., in which this preparation is official. It is liable to deteriorate when kept too long, and should not be prepared in larger quantity than may be consumed within a short time.

II. When this preparation is required for immediate use, and it is not otherwise obtainable, it may be prepared in the following manner (according to the N. F.):

Fluid extract of rhubarb	f.ldr. 13
Borax	gr. 72
Potassium carbonate	gr. 72
Cinnamon water	f.oz. 2
Alcohol	f.ldr. 6½
Water, to make	f.oz. 16

Dissolve the borax and potassium carbonate in about 8 fluidounces of water. Add the cinnamon water, alcohol, and fluid extract, and lastly, enough water to make the product measure 16 fluidounces. Filter, if necessary.—N. F.

Tincture of Rhubarb, Aromatic.

Rhubarb	av.oz. 3¾
Saigon cinnamon	gr. 290
Clove	gr. 290
Nutmeg	gr. 145
Glycerin	f.ldr. 13
Alcohol, water, each, to make	f.oz. 16

Prepare exactly like tincture of rhubarb.—U. S. P.

Tincture of Rhubarb, Compound.

I.

Rhubarb	gr. 350
Bitter-root (dogsbane)	gr. 175
Golden seal	gr. 175
Gentian	gr. 175
Prickly ash berries	gr. 175
Sassafras	gr. 88
Cardamom seed	gr. 88
Diluted alcohol, to make	f.oz. 16

Mix the drugs, reduce to moderately fine powder, and extract by percolation

or maceration with diluted alcohol so as to obtain 16 fluidounces of percolate.—Eclectic.

II. The Brit. Pharm. preparation given here is closely allied to the tincture of rhubarb of the U. S. P.:

Rhubarb, No. 20 powder....gr.	730
Cardamom, bruised	gr. 92
Coriander	gr. 92
Glycerin	fl.dr. 13
Alcohol, water, each, to make	fl.oz. 16

Mix the alcohol and water in the proportion of 7 volumes of the alcohol to 4 of the latter, moisten the mixed drugs with 13 fluidrams of this menstruum, extract by percolation so as to obtain 14½ fluidounces of liquid, set aside for 48 hours, filter, and add the glycerin.

Tincture of Rhubarb and Gentian.

I.

Rhubarb	gr. 512
Gentian	gr. 128
Diluted alcohol, to make....	fl.oz. 16

Reduce the solids to a moderately coarse (No. 40) powder, and percolate it, in the usual manner, with diluted alcohol, until 16 fluidounces of percolate are obtained.

Each fluidram represents 4 gr. of rhubarb and 1 gr. of gentian.

II. When this preparation is required for immediate use, and it is not otherwise obtainable, it may be prepared in the following manner (according to the N. F.):

Fluid extract of rhubarb...fl.dr.	8½
Fluid extract of gentian.....m.	128
Diluted alcohol to make....	fl.oz. 16

Mix the fluid extracts with enough diluted alcohol to make 16 fluidounces, and filter.

Tincture of Rhubarb, Koelreuter's.

Rhubarb, cut	av.oz. 2½
Bitter orange peel, cut fine..gr.	360
European centaury, cut fine..gr.	180
Fennel, bruised	av.oz. ¼
Alcohol	fl.oz. 9½
Distilled water	fl.oz. 8

Mix, macerate for 7 days, agitating occasionally, strain with expression, and filter.—D.

Tincture of Rhubarb and Senna. (Warner's Gout Cordial.)

Rhubarb	gr. 160
Senna	gr. 40
Coriander	gr. 20
Fennel	gr. 20
Licorice	gr. 10
Raisins, deprived of seeds..av.oz.	24
Diluted alcohol	fl.oz. 16

Mix, macerate for 7 days, agitating occasionally, express and filter.—U. S. P. 1870.

Tincture of Rhubarb, Sweet.

Rhubarb	gr. 720
Licorice root	gr. 290
Anise	gr. 290
Cardamom	gr. 72
Glycerin	fl.oz. 1½

Alcohol, water, diluted alcohol, each, to make....fl.oz. 16
—N. F. Appendix and U. S. P. 1890.

Prepare exactly like Tincture of Rhubarb, Aromatic, which see.

Tincture of Rhubarb, Vinous.

I.

Fluid extract of rhubarb...fl.dr.	10
Fluid extract of bitter orange peel	fl.dr. 2½
Tincture of cardamom....	fl.dr. 10
Sugar	av.oz. 2
Sherry wine, to make.....	fl.oz. 16

Mix the fluid extracts and tincture with 8 fluidounces of sherry wine. In this dissolve the sugar by agitation, then add enough sherry wine to make 16 fluidounces, and filter.—N. F.

This preparation corresponds approximately, in strength, to that which is official in the Germ. Pharm.

II. The process of the Germ. Pharm. is as follows:

Rhubarb, cut fine.....	gr. 580
Bitter orange peel, cut fine..gr.	145
Cardamom, bruised	gr. 72
Sherry wine	fl.oz. 16
Sugar	sufficient

Macerate the drugs and the wine for 7 days, occasionally agitating, filter, to the filtrate add one-seventh its weight of sugar, and dissolve by agitation.

Tincture of Saffron. (Tincture of Crocus.)

I.

Spanish saffron	gr. 360
Diluted alcohol, to make....	fl.oz. 8

Moisten the drug with 13 fluidounces of diluted alcohol, macerate for 24 hours; then pack firmly in a cylindrical percolator, and gradually pour diluted alcohol upon it until 8 fluidounces of percolate are obtained.—N. F. Appendix and U. S. P. 1890.

II.

Spanish saffrongr. 365
Waterfl.oz. 5¾
Alcoholfl.oz. 10¼

occasionally, strain with expression, and Mix, macerate for 7 days, agitating filter.—Brit. Pharm.

III.

Spanish saffron, cut fine...av.oz. 1½
Waterfl.oz. 3½
Alcoholfl.oz. 13

Mix, macerate for 7 days, agitating occasionally, strain with expression, and filter.—Germ. Pharm. (2nd).

IV.

The Homeopathic tincture is to be prepared of same strength as that of U. S. P., but using alcohol as the menstruum. This makes a 1x tincture, from which dilutions are made with dispensing alcohol. See Dilutions, Homeopathic.

Tinctures, Saturated.

These are described by Eclectics as preparations made by saturating a menstruum with as much of a drug as it will take up. This expression, now practically obsolete, is at present usually assumed to mean a fluid extract. Some tinctures, which are prepared by solution, such as tincture of iodine, are actually saturated or nearly saturated tinctures.

Tincture of Savin.

Savin, coarse powder.....av.oz. 2
Diluted alcohol, to make....fl.oz. 16
Extract the drug by percolation.
—Brit. Pharm. 1885.

Tincture of Scotch Pine. (Tincture of Pinus Sylvestris.)

Fresh drug (the shoots),
containing solidsgr. 730
(plant moisture, av.oz. 2½)
Alcoholfl.oz. 14
—Homeopathic.

This is intended to make 16 fluidounces. See Tinctures, Homeopathic, for method of preparation.

This makes a 1x tincture, from which dilutions are to be made with dispensing alcohol. See Dilutions, Homeopathic.

Tincture of Senega.

Senega root, No. 40 powd..av.oz. ¾
Alcohol, water, each, to
makefl.oz. 16

Extract the drug by percolation with a mixture of 7 volumes of alcohol and 4 of water.—Brit. Pharm.

Tincture of Senna, Compound. (Tincture of Senna, Brit. Phar. 1885—Elixir Salutis—Elixir of Health—Daffy's Elixir.)

Senna, cutav.oz. ¾
Caraway, bruisedgr. 185
Coriander, bruisedgr. 185
Raisins, freed from seeds...gr. 730
Diluted alcoholfl.oz. 16

Mix, macerate for 7 days, agitating occasionally, strain with expression, and filter.—Brit. Pharm.

The former formula of the Edinburgh Pharmacopeia was about as follows:

Alexandria senna, cut.....av.oz. 1
Jalap, fine powderav.oz. ½
Corianderav.oz. ¼
Raisins, deprived of seeds.av.oz. 1½
Brandy or diluted alcohol...fl.oz. 16

Macerate for 7 days, shaking occasionally, and filter.

Tincture of Serpentina. (Tincture of Virginia Snakeroot.)

Serpentina, No. 50 powd..av.oz. ¾
Alcohol, water, each, to
makefl.oz. 16

Prepare like tincture of black cohosh, using as a menstruum a mixture of 13 volumes of alcohol and 7 of water.—U. S. P.

II.

Serpentina, No. 40 powd..av.oz. ¾
Alcohol, water, each, to
makefl.oz. 16

Extract the drug by percolation with a mixture of 3 volumes of alcohol and 1 of water.—Brit. Pharm.

**Tincture of *Serpentaria*, Compound.
(Sudorific Tincture.)**

Serpentaria, fine powder.....gr. 145
 Ipecac, fine powder.....gr. 145
 Spanish saffrongr. 145
 Camphorgr. 145
 Opium, moderately coarse
 powdergr. 145
 Diluted alcohol or Holland
 ginfl.oz. 16

Macerate the drugs with the diluted alcohol or gin for 14 days, agitating occasionally, express, and filter.—Eclectic.

The preparation may also be made by percolation.

Some Eclectic physicians object to the opium in the above and substitute 585 grains of ladies' slipper root for it.

**Tincture of *Sheep-Laurel*. (Tinctura
Kalmia or Mountain Mint.)**

Sheep-laurel leaves, coarse
 powderav.oz. 3
 Diluted alcohol, to make....fl.oz. 16

Prepare a tincture by percolation or maceration.—Eclectic.

**Tincture of *Shepherd's Purse*. (Tinctura
Bursæ Pastoris—Tincture of
Capsella or *Bursa Pastoris*.)**

I.

Shepherd's purse herb, freshly gathered,
 Alcohol, each..equal parts by weight

Contuse the herb to pulp, add the alcohol, macerate for several days, express, and filter.—H.

II.

Fresh drug (whole plant),
 containing solidsgr. 730
 (plant moisture, av.oz. 3.9)
 Distilled waterfl.oz. 3½
 Alcoholfl.oz. 9..fl.dr. 5

—Homeopathic.

This is intended to make 16 fluid-ounces. See Tinctures, Homeopathic, for method of preparation.

This is a 1x tincture. Dilutions: 2x is to be made from 1 volume of tincture, 3 of distilled water, and 6 of alcohol; 3x and higher are to be made with dispensing alcohol. See Dilutions, Homeopathic.

Tincture of *Skunk Cabbage*.

I.

Skunk cabbage, recently dried, fine powder.....av.oz. 3
 Diluted alcohol, to make....fl.oz. 16
 Extract the drug by percolation or maceration.—Eclectic.

II. (This is also called Tincture of *Pothos Foetidus*):

Fresh drug (root), containing solidsgr. 730
 (plant moisture, av.oz. 8½)
 Alcoholfl.oz. 8..fl.dr. 5

—Homeopathic.

This is intended to make 16 fluid-ounces. See Tinctures, Homeopathic, for method of preparation.

This makes a 1x tincture. Dilutions: 2x is to be made from 1 volume of tincture, 4 of distilled water, and 5 of alcohol; 3x and higher are to be made with dispensing alcohol. See Dilutions, Homeopathic.

**Tincture of *Smart Weed*. (Tincture
of *Water Pepper*, *Polygonum Punctatum*, or *Polygonum Hydropiperoides*.)**

I.

Fresh drug (whole plant),
 containing solidsgr. 730
 (plant moisture, av.oz. 5)
 Alcoholfl.oz. 11½

—Homeopathic.

This is intended to make 16 fluid-ounces. See Tinctures, Homeopathic, for method of preparation.

This makes a 1x tincture. Dilutions: 2x is to be made from 1 volume of tincture, 2 of distilled water, and 7 of alcohol; 3x and higher are to be made with dispensing alcohol. See Dilutions, Homeopathic.

II.

Smart weed, fresh herb,
 enough to fill a jar,
 Holland gin or diluted alcohol, enough to fill the jar.

Macerate for 7 days, express, and filter.

Or it may be prepared from 4 av.-ounces of the powdered dry drug and enough diluted alcohol to make 16 fluid-

ounces, extracting the drug by percolation or maceration.—Eclectic.

Tincture of (Green) Soap.

See Liniment of Soft Soap.

Tincture of Soap Bark. (Tincture of Quillaja or Quillaia.)

I.

Soap bark, No. 20 powder...av.oz. 6¾
Alcoholfl.oz. 11
Water, to make.....fl.oz. 32

Boil the drug in a covered vessel with 26 fluidounces of water for 15 minutes, strain while hot, and wash the residue on the strainer with 6½ fluidounces of water, previously heated to boiling. Then evaporate the strained liquid to 20 fluidounces, allow it to cool, add the alcohol, and set it aside for 12 hours. Decant the clear liquid, filter it through paper, then pour the residue on the filter, and when the liquid ceases to drop, wash the filter with enough water to make 32 fluidounces of filtrate.—U. S. P.

II.

Soap bark, No. 20 powder...gr. 365
Alcohol, water, each, to
makefl.oz. 16

Extract the drug by percolation with a mixture of 7 volumes of alcohol and 4 of water.—Brit. Pharm.

III.

Dry druggr. 730
Distilled waterfl.oz. 8
Alcoholfl.oz. 8. fl.dr. 5

—Homeopathic.

This is intended to make 16 fluidounces. See Tinctures, Homeopathic, for method of preparation.

This makes a 1x tincture. Dilutions: 2x is to be made from 1 volume of tincture, 4 of distilled water, and 5 of alcohol; 3x and higher are to be made with dispensing alcohol. See Dilutions, Homeopathic.

Tincture of Spearmint. (Spirit of Mint.)

Spearmint, fresh herb, to
fill a glass jar,

Holland gin, to cover the herb.

Macerate for 7 days, express, and filter.—Eclectic.

Tincture of Spider Web.

Spider web, clean and recent-

ly spunav.oz. 2

Alcoholfl.oz. 16

Mix, macerate for 10 days, and filter.—Eclectic.

Tincture of Sponge or Spongia.

Spongegr. 183

Distilled waterfl.dr. 6½

Alcoholfl.dr. 26½

—Homeopathic.

This is intended to make 4 fluidounces. See Tinctures, Homeopathic, for method of preparation.

The kind of sponge known as Turkey sponge should be used, and should be unbleached. The sponges selected should be carefully freed from all foreign substances, cut into small pieces and then roasted until brown and friable.

The above forms a 1x tincture, from which dilutions are to be made with dispensing alcohol.

Tincture of Squill.

I.

Squill, No. 20 powder....av.oz. 1¾

Alcohol, water, to make....fl.oz. 16

Mix alcohol and water in the proportion of 3 volumes of the former to 1 of the latter. Macerate the drug with 9½ fluidounces of menstruum, in a closed vessel, in a moderately warm place for 3 days, occasionally stirring, and then express the liquid with strong expression. Macerate the residue with 5 fluidounces of menstruum for one day before expression; and finally repeat the operation with enough menstruum to make 16 fluidounces of product, macerating this time for 6 hours. Mix the three liquids, filter through paper, and pass enough menstruum through the filter to make 16 fluidounces of filtrate.

—U. S. P.

II.

Squill, bruisedav.oz. 3¼

Waterfl.oz. 5¾

Alcoholfl.oz. 10¾

Mix, macerate for 7 days, agitating occasionally, strain with expression, and filter.—Brit. Pharm.

III.

Squill, cut moderately fine. av. oz. 3
 Water fl. oz. 3½
 Alcohol fl. oz. 13

Mix, macerate for 7 days, agitating occasionally, strain with expression, and filter.—Germ. Pharm.

Tincture of Star Grass. (Tincture of Aletris Farinosa.)

Fresh drug (root), containing solids gr. 730
 (plant moisture, gr. 1460 = a total of av. oz. 5.)
 Distilled water fl. oz. 3¼
 Alcohol fl. oz. 10¼

—Homeopathic.

This is intended to make 16 fluidounces. It is a 1x tincture. See Tinctures, Homeopathic, for method of preparation.

Dilutions: 2x is to contain 1 volume of tincture, 2 of distilled water, and 7 of alcohol. The higher are to be made with dispensing alcohol. See Dilutions, Homeopathic.

Tincture of Stavesacre. (Tinctura Staphisagriæ.)

Stavesacre seed, fine powd. av. oz. 10
 Absolute alcohol, to make. . . fl. oz. 16

Extract the drug by maceration or percolation.—Eclectic.

Tincture of Stillingia. (Tincture of Queen's Root.)

Stillingia, recent, cut into small pieces and bruised. av. oz. 3
 Diluted alcohol, to make. . . fl. oz. 16

Extract the drug by percolation or maceration.—Eclectic.

Tincture of St. John's-Wort. (Tincture Hyperici.)

St. John's-wort flowers, fresh av. oz. 5
 Alcohol fl. oz. 16

Mix, macerate for 14 days, express, and filter.—Eclectic.

Tincture of Stramonium.

Stramonium leaves, No. 60 powder (containing not less than 0.35 per cent. of mydriatic alkaloids) . . . av. oz. 1¾
 Diluted alcohol, to make. . . fl. oz. 16

Prepare like tincture of belladonna leaves.

The product, when assayed, should contain 0.03 gm. of mydriatic alkaloids in 100 cc.—U. S. P.

The preparation of the Brit. Pharm. is twice the strength of this preparation and is also made with diluted alcohol.

The tincture of stramonium of the U. S. P. 1890 was made from the seed. See Tincture of Stramonium Seed.

Tincture of Stramonium Seed.

Stramonium seed, No. 40 powder av. oz. 2½
 Diluted alcohol, to make. . . fl. oz. 16

Moisten the drug with 1½ fluidounces of menstruum, macerate for 24 hours, pack it firmly in a cylindrical percolator, and gradually pour menstruum upon it until 16 fluidounces of percolate are obtained.—N. F. Appendix and U. S. P. 1890.

Tincture of Strophanthus.

I.

Strophanthus, No. 60 powd. av. oz. 1¾
 Alcohol, water, each, to make fl. oz. 16

Moisten the drug with 6½ fluidrams of a mixture of 13 volumes of alcohol and 7 of water, transfer this to a percolator, and without pressing the drug, allow it to stand, well covered, for 6 hours; then pack it firmly and pour on enough of the same menstruum to saturate the drug and leave a stratum above it. When the liquid begins to drop from the percolator, close the lower orifice, and, having closely covered the percolator, macerate for 48 hours. Then allow percolation to proceed slowly, pouring on enough menstruum to make 16 fluidounces of percolate.—U. S. P.

This tincture heretofore has been of the strength of 5 per cent., but is now 10 per cent. Also in nearly all the other processes, such as that of the 1st N. F., the drug was first extracted with stronger ether to remove oil, then dried, and subsequently extracted with alcohol to prepare the tincture, the ethereal extract being rejected. The extraction with a hydro-alcoholic menstruum, with-

out the preliminary use of ether, has been found to be satisfactory and is also the process of the Brit. Pharm.

The drug used is the ripe seed of *Strophanthus Kombé*, deprived of its long awn.

II.

Strophanthus seed, No. 30
powderav.oz. $\frac{1}{2}$
Alcohol, water, each, to
makefl.oz. 20

Mix alcohol and water in the proportion of 3 volumes of the former to 1 of the latter, pack the drug in a percolator, moisten it with 1 fluidram of the menstruum, set aside for 48 hours, pour on successive quantities of menstruum, allowing percolation to proceed slowly, until 10 fluidounces of percolate have been obtained, filter, and add enough menstruum to make 20 fluidounces.—Brit. Pharm.

This preparation is only half the strength of the corresponding preparation of the Brit. Pharm. 1885 (additions of 1890) and one-fourth of that of the U. S. P.

III.

Strophanthus seedav.oz. $1\frac{1}{2}$
Waterfl.oz. $3\frac{1}{2}$
Alcoholfl.oz. 13

Contuse the drug, remove the fixed oil as much as possible by expression, then reduce to moderately fine powder, macerate this with the alcohol and water for 7 days, agitating occasionally, and filter (without previous expression). If the filtrate is turbid, refilter it through purified talcum.—Germ. Pharm.

This preparation is of the same strength as the corresponding preparation of the U. S. P.

The *strophanthus* to be used are the seeds of *Strophanthus hispidus* and *Kombé*.

IV.

Strophanthus powderav.oz. $\frac{3}{4}$
Alcohol, stronger ether,
eachsufficient

Extract the drug with the ether to remove fixed oil, then dry the drug, and

extract with alcohol so as to obtain 15 av.ounces of tincture.—Austr. Pharm.

Tincture of Strychnine. (Magendie's Tincture of Strychnine.)

This solution has been known by this title:

Strychnine (alkaloid)gr. 3
Alcoholfl.oz. 1
Agitate occasionally until dissolved.
Tinctura strychni of the Germ.

Pharm. is tincture of *nux vomica* and should not be confounded with the above.

Tincture of Strychnine, Compound.

Strychnine (alkaloid)gr. 16
Acetic acidfl.dr. 4
Compound tincture of carda-
momfl.dr. 4
Distilled waterfl.oz. $7\frac{1}{2}$
Alcoholfl.oz. $7\frac{1}{2}$

Dissolve the strychnine in the alcohol and acetic acid, add the remaining ingredients, and filter.—Eclectic.

Tincture of Sulfur. (Spirit of Sulfur.)

I.

The Homeopathic tincture is a solution of sublimed sulfur in alcohol of the strength of 1 to 5000 (1 gm. to 5000 cc. or 1 gr. to $87\frac{1}{2}$ fl.dr. or approximately 1 gr. to 11 fluidounces). 4x dilution is to be made by mixing equal volumes of this tincture and alcohol.

II.

Washed sulfurgr. 75
Absolute alcoholfl.oz. 4

Mix, macerate for 4 days, agitating occasionally, and filter in a well-covered funnel.—H.

Tincture of Sumbul. (Tincture of Musk Root.)

I.

Sumbul, No. 30 powder....av.oz. $1\frac{1}{2}$
Alcohol, water, each, to
makefl.oz. $14\frac{1}{2}$

Mix alcohol and water in the proportion of 13 volumes of alcohol to 7 of water. Moisten the drug with 13 fluidrams of this menstruum, macerate for 24 hours, then pack firmly in a cylindrical percolator, and gradually add menstruum until $14\frac{1}{2}$ fluidounces of the percolate are obtained.

II. The preparation of the Brit. Pharm. differs from the above only in being made with a mixture of 3 volumes of alcohol and 1 of water.

III.

Dry druggr. 730
Distilled waterfl.oz. $3\frac{1}{4}$
Alcoholfl.oz. $13\frac{1}{4}$

—Homeopathic.

This is intended to make 16 fluid-ounces.

This corresponds to the U. S. P. preparation, but is made with a slightly more alcoholic menstruum.

This makes a 1x tincture, from which dilutions are to be made with dispensing alcohol. See Dilutions, Homeopathic.

Tincture of Sweet Sumach. (Tincture of Fragrant Sumach or Rhus Aromatica.)

Fresh drug (leaves), containing solidsgr. 730
(plant moisture, av.oz. 3.9)
Distilled waterfl.dr. 13
Alcoholfl.oz. $11\frac{1}{4}$

—Homeopathic.

This is intended to make 16 fluid-ounces. See Tinctures, Homeopathic, for method of preparation.

This is a 1x tincture. Dilutions: 2x is to be made from 1 volume of tincture, 2 of distilled water, and 7 of alcohol; 3x and higher are to be made with dispensing alcohol. See Dilutions, Homeopathic.

Tincture of Tansy, Compound.

Tansy, coarse powder....av.oz. 1
Swamp milkweed, coarse powderav.oz. $\frac{1}{2}$
Unicorn root, coarse powd.av.oz. $\frac{1}{4}$
Prickly-ash berries, coarse powderav.oz. $\frac{1}{4}$
Diluted alcoholfl.oz. 16

Macerate for 14 days, agitating occasionally, and filter.—Eclectic.

Tincture of Thuja. (Tincture of Arbor Vitæ.)

Thuja, fresh tops.....av.oz. $3\frac{1}{2}$
Alcohol, to make.....fl.oz. 16

Macerate the drug for 7 days with 16 fluidounces of alcohol, pour off the liquid, and express the remainder. Treat the latter with fresh portions of alcohol,

forcibly expressing each time, until the whole, when filtered, measures 16 fluid-ounces.

Tincture of Tobacco. (Tincture of Tabacum.)

Drug (the recently dried leaves, those imported from Havana being preferred)gr. 730
Distilled waterfl.oz. $3\frac{1}{4}$
Alcoholfl.oz. $13\frac{1}{4}$

—Homeopathic.

This is intended to make 16 fluid-ounces. See Tinctures, Homeopathic, for method of preparation.

This makes a 1x tincture, from which dilutions are to be made with dispensing alcohol. See Dilutions, Homeopathic.

Tincture of Tolu. (Tincture of Balsam of Tolu.)

Tolu balsamav.oz. $3\frac{1}{4}$
Alcohol, to make.....fl.oz. 16

Macerate the balsam in $14\frac{1}{2}$ fluid-ounces of alcohol, shaking frequently until dissolved; then filter through paper and wash the filter with enough alcohol to make 16 fluidounces of filtrate.—U. S. P.

The preparation of the Brit. Pharm. is one-half the strength of the above.

Tincture of Tolu, Concentrated.

Same as Extract, Fluid, of Tolu, which see.

Tincture of Tolu, Ethereal.

Tolu balsamgr. 120
Alcoholfl.oz. 1
Stronger etherfl.dr. 2

Dissolve the balsam in the alcohol, by agitation, filter the solution through a pledget of cotton placed in the neck of a funnel, add the ether to the filtrate, and mix well.—N. F.

This is to be used for "tolu-coating" pills. See Pill Coating.

Tincture of Tolu, Soluble.

Tolu balsamgr. 720
Magnesium carbonategr. 75
Glycerinfl.oz. 6
Water, alcohol, each, to makefl.oz. 16

Mix 3 fluidounces of alcohol with the glycerin, and dissolve the balsam

in the mixture with the aid of heat, avoiding loss by evaporation. Next add 6 fluidounces of water, and allow the mixture to become cold. Pour off the milky liquid from the resinous precipitate (which latter is to be rejected), mix it with the magnesium carbonate, by trituration, and filter. Lastly, pass enough of a mixture of 1 volume of alcohol and 2 of water through the filter, to make the whole filtrate measure 16 fluidounces.

This preparation may be added to simple syrup or water without producing cloudiness. A mixture of 1 fluidounce of this preparation with 15 fluidounces of simple syrup yields a product which may be used as syrup of tolu in all cases where the official preparation is not required.—N. F.

The above preparation is actually only about 10 times the strength of syrup of tolu.

See also Extract, Fluid, of Tolu, Soluble.

Tincture of Turmeric. (Tincture of Curcuma.)

This is recognized by the U. S. P. only as a test preparation, the formula being as follows:

Digest any convenient quantity of ground turmeric root repeatedly with small quantities of water and throw the liquids away. Then digest the dried residue for several days with 6 times its weight of alcohol, and filter.

The Brit. Pharm. directs the tincture to be made in the proportion of 1 gm. of bruised drug to 6 cc. of alcohol by maceration.

For ordinary use, the tincture may be prepared by extracting 3 av.ounces of powdered drug with enough alcohol to make 16 fluidounces.

Tincture of Turpentine Oil.

Oil of turpentine.....av.oz. 1
Alcoholfl.oz. 8. fl.dr. 5
—Homeopathic.

This makes a 1x tincture, from which dilutions are to be made with alcohol. See Dilutions, Homeopathic.

Tincture of Valerian.

I.

Valerian, No. 60 powder...av.oz. 3¼
Alcohol, water, each, to
makefl.oz. 16

Prepare like tincture of black cohosh, using as a menstruum a mixture of 3 volumes of alcohol to 1 of water.—U. S. P.

II.

Valerian, cut moderately
fineav.oz. 3
Waterfl.oz. 3½
Alcoholfl.oz. 13

Mix, macerate for 7 days, agitating occasionally, strain with expression, and filter.—Germ. Pharm.

III.

Valerian, No. 40 powder...av.oz. 2
Alcohol, water, each, to
makefl.oz. 16

Mix the alcohol and water in the proportion of 9 volumes of the former to 5 of the latter, macerate the drug with 12 fluidounces of this menstruum for 48 hours, agitating occasionally, then transfer to a percolator, and when the liquid ceases to pass add 4 fluidounces more of the mixed alcohol and water. When this has passed, subject the contents of the percolator to pressure, filter the combined liquids, and add enough of the same mixture of alcohol and water to make 16 fluidounces of product.—Brit. Form.

IV.

Drug (the root, recently
dried)gr. 730
Distilled waterfl.oz. 8
Alcoholfl.oz. 8. fl.dr. 5
—Homeopathic.

This is intended to make 16 fluidounces. See Tinctures, Homeopathic, for method of preparation.

This makes a 1x tincture and is one-half the strength of the U. S. P. preparation. Dilutions: 2x is to be made from 1 volume of tincture, 4 of distilled water, and 5 of alcohol; 3x and higher are to be made with dispensing alcohol. See Dilutions, Homeopathic.

Tincture of Valerian, Ammoniated.
(Compound or Volatile Tincture of Valerian.)

I.

Valerian, No. 60 powder...av.oz. $3\frac{1}{4}$
Aromatic spirit of ammonia,
to makefl.oz. 16

Prepare like tincture of black cohosh,
using aromatic spirit of ammonia as a
menstruum.—U. S. P.

II.

Valerian, No. 40 powder...av.oz. $3\frac{1}{4}$
Oil of nutmeg.....m. 25
Oil of lemon.....m. 15
Ammonia waterfl.dr. 13
Waterfl.oz. $5\frac{1}{4}$
Alcoholfl.oz. $9\frac{1}{4}$

Mix all together, macerate for 7 days,
agitating occasionally, strain with ex-
pression, and filter in a well-covered
funnel.—Brit. Pharm.

Tincture of Valerian, Ethereal.

Valerian, cut moderately
fineav.oz. 3
Stronger etherfl.oz. 5
Alcoholfl.oz. 13

Mix, macerate for 7 days, agitating
occasionally, strain with expression, and
filter in a well-covered funnel.—Germ.
Pharm.

See also Tinctures, Ethereal.

**Tincture of Vanilla. (Extract or Es-
sence of Vanilla.)**

Vanilla, cut into small pieces
and bruisedav.oz. 5
Sugar, coarse powder....av.oz. 10
Alcohol, water, each, to
makefl.oz. 48

Mix the alcohol and water in the pro-
portion of 13 volumes of the former to
7 of the latter. Macerate the vanilla
in 24 fluidounces of this mixture for 12
hours, then drain off the liquid, trans-
fer the vanilla to a mortar, beat it with
the sugar to a uniform powder, pack the
latter into a percolator, and pour on
the liquid which was drained off. When
this has disappeared from the surface
of the powder, gradually pour on more
of the menstruum until 48 fluidounces
of percolate are obtained.—U. S. P.

Instead of cutting and bruising the

vanilla, it may be more conveniently re-
duced by means of a food chopper.

Other formulas for this tincture as
well as for other flavoring extracts may
be found in the Standard Manual of
Beverages.

Tincture of Vanillin, Compound.
(Compound Essence of Vanillin.)

Vanillingr. 45
Cumaringr. 3
Glycerinfl.oz. 2
Simple syrupfl.oz. 2
Alcoholfl.oz. 3
Comp. tincture of cudbear..fl.dr. 2
Water, to make.....fl.oz. 16

Dissolve the vanillin and cumarin in
the alcohol, add the glycerin, syrup, and
tincture, and lastly, enough water to
make 16 fluidounces.—N. F.

**Tincture of Veratrum. (Tincture of
Veratrum Album.)**

Veratrum album, cut mod-
erately fineav.oz. $1\frac{1}{2}$
Waterfl.oz. $3\frac{1}{2}$
Alcoholfl.oz. 13

Mix, macerate for 7 days, agitating
occasionally, strain with expression, and
filter.—Germ. Pharm.

In this country the tincture of the
closely allied drug, veratrum viride, is
used; see Tincture of Veratrum Viride.

**Tincture of Veratrum Viride. (Tinc-
ture of American or Green Hella-
bore—Tincture of Veratrum, U.
S. P. 1900.)**

I.

Veratrum viride, No. 60
powderav.oz. $1\frac{3}{4}$
Alcohol, to make.....fl.oz. 16

Prepare like tincture of cantharides.—
U. S. P.

This preparation is only one-fourth
as strong as the corresponding prepara-
tion of the U. S. P. 1890.

II. Dr. Norwood's formula for this
tincture is said to have been as fol-
lows:

Veratrum viride, dried....av.oz. 8
Waterfl.oz. $1\frac{1}{2}$
Alcoholfl.oz. $14\frac{1}{2}$

Mix, macerate for 14 days, express,
and filter.

III.

Veratrum viride, fresh root,
gathered soon after decay
of leaves in autumn, and
sliced transverselyav.oz. 8
Diluted alcoholfl.oz. 16
Mix, macerate for 14 days, agitating
occasionally, express, and filter.—Ec-
lectic.

IV.

Veratrum viride, No. 40
powderav.oz. 3¼
Alcohol, to make.....fl.oz. 16
Extract the drug by percolation.—
Brit. Form.

V.

Fresh drug (root), contain-
ing solidsgr. 730
(plant moisture, av.oz. 3.9)
Alcoholfl.oz. 12¾
—Homeopathic.

This is intended to make 16 fluid-
ounces. See Tinctures, Homeopathic,
for method of preparation.

This is a 1x tincture, from which di-
lutions are to be made with dispensing
alcohol. See Dilutions, Homeopathic.

Tincture of Viburnum, Compound.
(Compound Tincture of Cramp
Bark or High Cranberry—Vi-
burnum Compound.)

I.

Cramp barkgr. 240
Wild yamgr. 240
Scullycapgr. 72
Clovegr. 360
Cinnamongr. 480
Glycerinfl.oz. 1
Alcohol, water, each, to
makefl.oz. 16

Reduce the drugs to a moderately
coarse (No. 40) powder. Mix the gly-
cerin with 12 fluidounces of alcohol and
moisten the powder with 2½ fluidounces
of this mixture, and macerate for 48
hours in a percolator. Then percolate
with the remainder of this menstruum,
followed by a mixture of 5 volumes of
alcohol and 1 of water, until 16 fluid-
ounces of tincture are obtained.—N. F.

II. Cinc. Acad. Pharm. uses this
formula:

Fluid ext. of cramp bark....fl.oz. 2½
Fluid ext. of scullcap.....fl.dr. 6½
Fluid extract of wild yam...fl.dr. 6½
Fluid extract of beth root...fl.dr. 6½

Fluid extract of aletris (star
grass or unicorn root)....fl.dr. 6½
Mix, allow to stand a few days, and
filter.

Each fluidram represents about 10 gr.
of cramp bark and 3 gr. each of scull-
cap, wild yam, beth root and star grass.

The first formula is the preferable
one.

III.

Cramp barkav.oz. ½
Lobelia seedav.oz. ¼
Skunk cabbage seed.....av.oz. ¼
Stramonium seedgr. 55
Capsicumgr. 55
Blood-rootgr. 55
Alcohol, to make.....fl.oz. 16

Reduce the drugs to moderately fine
powder and extract by maceration or
percolation.—Eclectic.

If skunk cabbage seed is not avail-
able, the root may be substituted for it.

This preparation is used in asthma
and hysteria. A similar Eclectic prep-
aration used for the same purposes, be-
ing also suitable for females during
gestation, is the following:

Cramp barkav.oz. ½
Scullycapav.oz. ¼
Skunk cabbageav.oz. ¼
Clovegr. 55
Capsicumgr. 30
Good sherry or native wine.fl.oz. 16

The drugs are to be used in coarse
powder and may be extracted by mac-
eration.

Tincture, Volatile.

Thomsonian (from the Materia Med-
ica):

To 1 quart of cherry spirits add 2
ounces of capsicum, when settled pour
off, and add a few drops of oil of
pennyroyal.

The cherry spirits is brandy in which
cherry-stone kernels have been mac-
erated.

**Tincture of Wahoo. (Tincture of
Euonymus.)**

Wahoo bark, powder.....av.oz. 3¼
Alcoholsufficient

Extract the drug by percolation so as
to obtain 16 fluidounces of product.—
Brit. Form.

Tincture, Warburg's.

See Tincture, Antiperiodic.

Tincture of Water-Pepper.

See Tincture of Smart Weed.

Tincture of Wild Cherry. (Tincture of Virginian Prune.)

Wild cherry, No. 20 powd. av. oz. $3\frac{1}{4}$

Alcohol fl. oz. 10

Distilled water fl. oz. 6

Mix the drug with the water, set aside in a closed vessel for 24 hours, then add the alcohol, macerate for 6 days more, agitating occasionally, strain with expression, and filter.—Brit. Pharm.

Tincture of Wild Indigo. (Tincture of Baptisia.)

Fresh drug (root bark) gr. 730

(plant moisture, av. oz. 3.9)

Distilled water fl. dr. 13

Alcohol fl. oz. $11\frac{1}{4}$

—Homeopathic.

This is intended to make 16 fluid-ounces. It makes a 1x tincture. See Tinctures, Homeopathic, for method of preparation.

Dilutions: 2x is to be made from 1 volume of tincture, 2 of distilled water, and 7 of alcohol; 3x and higher are made with dispensing alcohol. See Dilutions, Homeopathic.

Tincture of Witch-Hazel. (Tincture of Hamamelis.)

Hamamelis bark, No. 20

powder gr. 730

Diluted alcohol, to make... fl. oz. 16

Extract the drug by percolation.—Brit. Form.

Tincture of Wormseed. (Tincture of Cina—Tincture of German or Levant Wormseed—Tincture of Santonica.)

Dry drug gr. 730

Alcohol fl. oz. 16

—Homeopathic.

This is intended to make 16 fluid-ounces. See Tinctures, Homeopathic, for method of preparation.

This makes a 1x tincture, from which dilutions are made by addition of dispensing alcohol. See Dilutions, Homeopathic.

Tincture of Wormwood. (Tincture of Absinthium.)**I.**

Wormwood, cut moderately

fine av. oz. 3

Water fl. oz. $3\frac{1}{2}$

Alcohol fl. oz. 13

Mix, macerate for 7 days, agitating occasionally, strain with expression, and filter.—Germ. Pharm.

II.

Wormwood, coarse powder. av. oz. $1\frac{1}{2}$

Water fl. oz. 4

Alcohol fl. oz. $12\frac{1}{2}$

Mix, macerate for 7 days, agitating occasionally, express, and filter.—Swed., Norw., and Dan. Pharms.

Tincture of Wormwood, Compound.

Blessed thistle gr. 130

Galangal gr. 130

Orange berries gr. 130

Wormwood gr. 520

Water fl. oz. 4

Alcohol fl. oz. $12\frac{1}{2}$

Reduce the drugs to coarse powder, mix with the alcohol and water, macerate for 7 days, agitating occasionally, express, and filter.—Swed. Pharm.

This is akin to the tinctura amara of the Norw. and Dan. Pharms. See Tincture, Bitter, No. IV.

Tincture of Zedoary, Bitter. (Compound Tincture of Zedoary.)

Zedoary root av. oz. 4

Aloes av. oz. 2

Rhubarb av. oz. 1

Gentian av. oz. 1

White agaric av. oz. 1

Saffron av. oz. 1

Glycerin fl. dr. 15

Alcohol, water, each, to

make fl. oz. $14\frac{1}{2}$

Reduce the solids to a moderately coarse (No. 40) powder, moisten this with a sufficient quantity of a mixture of 2 volumes of alcohol and 1 of water, and percolate it in the usual manner, with this menstruum, until 11 fluid-ounces of percolate are obtained. Add to this the glycerin and set it aside. Then continue the percolation, until the drugs are practically exhausted, evaporate the new percolate to $1\frac{1}{2}$ fluid-

ounces, and add it to the reserved portion.

Each fluidram represents 15 gr. of zedoary, about 7 gr. of aloes, and about $3\frac{1}{2}$ gr. each of the other drugs.—N. F.

The above preparation is not identical with the Tincture of Zedoary, Compound (which see), which was formerly official in some continental pharmacopeias.

Tincture of Zedoary, Comp. (Carminative Tincture—Wedell's Tincture or Drops.)

This preparation, formerly official in some continental pharmacopeias, is as follows:

Zedoary, coarse powder.....gr.	580
Calamus, coarse powder.....gr.	290
Galanga, coarse powder.....gr.	290
Roman chamomile, cut.....gr.	145
Anise, bruised.....gr.	110
Clove, bruised.....gr.	110
Mace, cut.....gr.	75
Bitter orange peel, coarse powder.....gr.	40
Spirit of hydrochloric ether.fl.oz.	2
Peppermint water.....fl.oz.	8
Alcohol.....fl.oz.	$9\frac{1}{2}$

Macerate the drugs with the mixed alcohol and water for 8 days, agitating occasionally, express, add the spirit to the colature, allow to stand for several days, and filter.—D.

Tisanes.

These are weak aqueous preparations, used by the French, which are made from drugs by maceration, infusion, digestion or decoction.

Tonics.

Under this name are grouped a number of miscellaneous preparations which have been favorite formulas of well-known physicians.

Tonic, Acid Iron, Cotton's.

Ferrous sulfate, pure.....gr.	360
Nitrohydrochloric acid...fl.oz.	2
Mix and let stand for 24 hours.	

The dose is 10 to 12 drops in 3 or 4 fluidounces of water.

Tonic, Hammond's.

This is the usually accepted formula:

Strychnine sulfate.....gr.	$\frac{1}{2}$
Iron phosphate, scale.....gr.	60
Quinine sulfate.....gr.	60
Diluted phosphoric acid...fl.oz.	2
Syrup of ginger, to make...fl.oz.	2

The strychnine sulfate and iron phosphate should first be dissolved in a small amount of warm distilled water.

Tonic, Hensel's. (Hensel's Tonicum—Essentia Tonica Henseli—Tinctura Tonico-Nervina Henseli—Tinctura Ferri Acetica Formicica or Acetico-Formicati.)

Marble dust.....gr.	150
Ferrous sulfate, pure, crystal.....gr.	105
Solution of iron tersulfate, U. S. P.....m.	400
Acetic acid, glacial..fl.oz.	3 m. 45
Formic acid, sp. gr. 1.20...fl.dr.	4
Acetic ether.....fl.dr.	1
Alcohol.....fl.oz.	5
Distilled water.....fl.oz.	$6\frac{3}{4}$

Dissolve the marble dust in the formic acid diluted with $3\frac{3}{4}$ fluidounces of the water. Dissolve the ferrous sulfate in the acetic acid mixed with the remainder of the water and add the solution of iron tersulfate. Mix the two solutions, add the alcohol, filter off the precipitated calcium sulfate, after the latter has subsided considerably, and then add the acetic ether.

Some other strength of formic acid may be used, if it be on hand, provided more or less of it be employed and correspondingly less or more water.

If the preparation can be allowed to stand for 2 or 3 months before using, no acetic ether need be added, as it will form by interaction of the alcohol and acetic acid.

The above is the older formula (reduced from all parts by weight); a later and slightly different formula is the following from the Badische Ergaenzungs Taxe (in D.):

Calcium carbonate.....gr.	300
Ferrous sulfate, pure, crystal.....gr.	105
Solution of iron tersulfate, U. S. P.....m.	400
Acetic acid, 36 per cent....fl.oz.	2 fl.dr. $6\frac{1}{4}$
Formic acid, sp. gr. 1.06 (25	

p. c. of absolute acid).....
f.oz. 2. m. 15
 Acetic etherf.oz. 1½
 Alcoholf.oz. 5
 Distilled waterf.oz. 3¼
 Mix all like the preceding, set aside in a stoppered bottle for 8 days in a cool place, and filter.

Stronger acetic and formic acids may be used, if desired, provided correspondingly less be employed and more of water.

Tonic, Red, Wood's.

Nitrohydrochloric acid.....f.dr. 2
 Strychnine sulfategr. 1
 Syrup of ginger.....f.oz. 1½
 Comp. tincture of gentian...f.oz. 2
 Compound tincture of cardamom, to make.....f.oz. 6

The strychnine sulfate should be dissolved in the acid or in a small amount of hot distilled water.

Transfusion Fluids.

I. Billroth's:

Sodium phosphategr. 3
 Sodium carbonategr. 20
 Ammonium carbonategr. 20
 Sodium chloridgr. 60
 Alcoholm. 160
 Distilled water, to make...f.oz. 20

II. Little's:

Sodium phosphategr. 3
 Potassium chloridgr. 6
 Sodium carbonategr. 40
 Sodium chloridgr. 60
 Distilled water, to make...f.oz. 20

III. Weber's:

Sodium bicarbonategr. 6
 Calcium chloridgr. 6
 Potassium chloridgr. 6
 Sodium chloridgr. 480
 Distilled water, to make...f.oz. 8

For use, dilute 1 fluidounce of this solution with water at 50 deg. C., so as to make 16 fluidounces.

Triturations.

The U. S. P. gives a general process for making a class of preparations known as triturations, as follows:

Weigh 1 part of the substance and 9 parts of sugar of milk in moderately fine powder, separately. Place the substance, previously reduced if necessary

to a moderately fine powder, in a mortar; add about an equal measure of sugar of milk, mix well by means of a spatula, and triturate the powders thoroughly together. Then add fresh portions of sugar of milk, from time to time, until the whole is added, and continue the trituration until the substance is intimately mixed with all the sugar and the whole is reduced to fine powder.

These preparations are intended to be dilutions in powder form of potent medicinal substances.

For the triturations of homeopathy, see Triturations, Homeopathic.

Trituration of Calcium Sulfid.

Calcium sulfidpart 1
 Milk sugarparts 99

Mix thoroughly by trituration.—Eclectic.

This makes the first centesimal trituration.

The first decimal trituration may be made by mixing 1 part of calcium sulfid with 9 parts of milk sugar.

Trituration of (Wood) Charcoal.

Wood charcoalpart 1
 Milk sugarparts 99

Mix thoroughly by trituration.—Eclectic.

This makes the first centesimal trituration. The first decimal trituration may be made by mixing one part of wood charcoal with 9 of milk sugar.

Trituration of Croton Oil.

Croton oilpart 1
 Sugar of milk, powder....parts 49
 Etherparts 10

Dissolve the oil in the ether, mix this with about one-third of the sugar and triturate until the ether has evaporated; then add the remainder of the sugar in divided portions, triturating thoroughly after each addition.—Eclectic.

Trituration of Elaterin.

Elateringr. 10
 Sugar of milk, moderately fine powdergr. 90

Mix according to directions given under Triturations, which see.—U. S. P.

Triturations, Homeopathic.

Triturations of homeopathic pharmacy are made by triturating solid substances with milk sugar, preferably insoluble solid substances, and reserving soluble substances for making dilutions (see Dilutions, Homeopathic).

To make the first decimal trituration, rub together 1 part by weight of drug with 9 parts by weight of finely powdered milk sugar, and triturate until the largest drug particles do not exceed 1/100 of an inch in diameter. This rule is inapplicable to moist and soluble substances, and relates chiefly to those which are hard and practically insoluble, such as metals and minerals. It will be found difficult to reach the desired reduction in any specified time, and therefore the old one-hour time limit is not to be depended upon, some substances being reducible in less time, while most of the metals require more time.

The trituration obtained is the first decimal trituration, which is designated as ix.

The second decimal (2x) trituration is made by triturating 1 part by weight of the first decimal trituration with 9 parts of finely powdered milk sugar until the largest drug particles do not exceed 1/2000 of an inch in diameter.

The third decimal (3x) trituration is made from the second by rubbing with 9 times its weight of milk sugar until the largest drug particles measure not to exceed 1/4000 inch in diameter.

Higher triturations are made from the next weaker trituration by incorporating with it 9 times its weight of milk sugar.

Hahnemann's original method of making triturations was as follows: Take 100 grains of fine milk sugar and divide it into three equal parts. Then add 1 grain of the drug to one of the three parts of milk sugar in a mortar, mix well with a spatula, then rub for 6 minutes with a moderate degree of force. The trituration is then to be scraped together during 4 minutes. An-

other third of milk sugar is then added and treated exactly like the first third; then the last third is added and treated in exactly the same manner. This produces the first centesimal (1 or 1c) trituration. The second (2 or 2c) is made from the first by trituration of the first with 100 times its weight of milk sugar, and so on for the third and succeeding triturations.

The centesimal trituration is no longer recognized by the standard homeopathic work, the Pharmacopeia of the American Institute of Homeopathy.

Tincture triturations are a class of preparations different from the preceding triturations in that they are made from the strong tinctures, and consequently contain the soluble constituents only of the drug, and should be distinguished from triturations made from the entire drug substance.

In making, add 10 cc. of the strong tincture to 10 gm. of milk sugar (or 90 minims to 85 grains), mix carefully in a mortar with pestle and spatula, and cover with a paper until the powder is very nearly dry; then triturate gently until quite dry, and preserve in glass or porcelain jars tightly closed, in a cool, dry place.

Succeeding triturations are to be made by adding to each part of the next lower trituration 9 parts of milk sugar, and triturating thoroughly.

These tincture triturations are akin to medicated powders. See Medications, Homeopathic.

Trituration of Iron (Ferrous) Carbonate.

A mixture of equal weights of saccharated iron carbonate, U. S. P., and milk sugar makes the Homeopathic ix trituration. See Triturations, Homeopathic.

Trituration of Podophyllin.

Podophyllinpart 1
Milk sugarparts 99
Mix thoroughly by trituration.—Ecclectic.

This forms the first centesimal trituration. The first decimal trituration may be made by mixing 1 part of podophyllin with 9 parts of milk sugar.

Trituration of Santonin and Podophyllin.

Santoningr. 5
Podophyllingr. 1
White or milk sugar.....gr. 60

Mix thoroughly by trituration and divide into 10 powders.—Eclectic.

This is an excellent remedy against intestinal worms. The dose is one powder night and morning.

Trituration of Sepia.

Sepia is used in Homeopathic 1x and higher triturations. See Triturations, Homeopathic. The lower triturations require much time and labor in their preparation, as sepia is difficult to reduce.

Sepia is a brownish-black substance which is the dried inky secretion of the cuttle fish. As it appears commercially, it consists of a brittle solid mass, almost tasteless, and having a faint smell of sea fish. It breaks with a conchoidal, shining fracture. The article prepared for artists is unfit for medicinal use.

Triturations, Tincture.

See under Triturations, Homeopathic.

Troches. (Lozenges — Tablets—Pastilles—Zeltchen—Trochisci.)

A number of troches are recognized by the U. S. P. These consist, as a rule, of medicinal solid substances mixed with tragacanth or acacia and then made into a mass with some water or syrup, or else they are directly made into a mass by the addition of mucilage, the mass then being rolled out into sheets, and cut into lozenges by means of a suitable punch. After being cut, the lozenges should be put into a warm place to dry. The sugar used for making troches should be of the very fine kind known as "confectioners' sugar."

The Brit. Pharm. recognizes four kinds of vehicles for troches, known respectively as "fruit vehicle," "rose ve-

hicle," "simple vehicle" and "tolu vehicle," and for preparing the troches, the following general directions are given:

Troches with Fruit Vehicle.—Take 100 times the quantity of drug ordered for one troche and mix it intimately with 3 av.ounces and 90 grains of finely powdered sugar and 60 grains of powdered acacia. Make the mixture into a suitable mass with 2 fluidrams of mucilage of acacia and 175 grains of black-currant paste previously softened with boiling distilled water, adding any additional water that may be necessary to make the mass. Divide the latter into 100 equal troches, and dry them in a hot-air chamber or other warm place at a moderate temperature.

The mass may be rolled out like a dough and cut with a punch.

The currant paste may be the article of commerce or it may be prepared according to the directions given under Paste, Currant, which see.

Troches with Rose Vehicle.—Take 100 times the quantity of drug ordered for one troche and mix it intimately with 3½ av.ounces of finely powdered sugar and 60 grains of powdered acacia. Make the mixture into a suitable mass with 1 fluidram of mucilage of acacia and sufficient rose water, and divide into 100 troches in the usual manner. Dry them in a hot-air chamber or other warm place at a moderate temperature.

Troches with Simple Vehicle.—These differ from the preceding only in the use of 2 instead of 1 fluidram of mucilage and of distilled water instead of water.

Troches with Tolu Vehicle.—Take 100 times the quantity of drug ordered for one troche, dissolve what alkaloidal salts may be ordered in 35 minims of distilled water, and mix the solution intimately with 3 av.ounces and 175 grains of finely powdered sugar and 60 grains of powdered acacia. Thoroughly incorporate with this mixture any other

drugs ordered for the troches, and 35 minims of tincture of tolu. Make into a suitable mass with 2 fluidrams of mucilage of acacia and sufficient distilled water, and divide into 100 equal troches. Dry in a hot-air chamber or other warm place at a moderate temperature.

The Germ. Pharm. states that the troches (pastilles) are to be made by compression or by massing with a suitable excipient, and forming into troches. The 2nd Germ. Pharm. was more definite, stating that the medicinal substances should be mixed with sugar, made into a plastic mass with diluted alcohol and divided into troches which should weigh 15 grains.

The Germ. Pharm. directs that chocolate troches are to be prepared from the drug, cocoa and sugar. The whole is to be melted at a gentle heat and allowed to cool partially when it is to be divided into troches weighing 15 grains each, unless otherwise specified. The older Germ. Pharm. stated that equal parts of cocoa and sugar are to be used.

In making sugar troches, confectioners have other ways of preparing them besides those given above. It is probable that they use little or no acacia or tragacanth but rely mainly on syrupy glucose as a binding agent.

For another form of troches, see Pastilles, Glyco-Gelatin, which are prepared from gelatin and glycerin.

The pastilles of the former Germ. Pharm. were different from the troches. They are directed to be prepared by mixing the ingredients in powder form, binding these with excipients and forming into pastilles. Water is to be used as an excipient for mixtures containing sugar, acacia or tragacanth, and alcohol for effervescent mixtures. Each pastille is to weigh 15 grains unless otherwise directed.

Troches of Ammonium Chlorid.

Ammonium chlorid, fine powdergr. 150
Extract of licorice, fine powder

dergr. 300
Tragacanth, fine powder.....gr. 30
Sugar, fine powder.....gr. 600
Syrup of tolu, to make.....a mass
Triturate the powders together until they are thoroughly mixed, add the syrup, make a mass, and divide into 100 troches.—U. S. P.

Troches, Benzoic Acid.

Each troche is to contain $\frac{1}{2}$ grain of benzoic acid, which is to be massed with the fruit vehicle. See under heading Troches for method of preparation.—Brit. Pharm.

Troches, Bismuth, Compound.

Each troche is to contain
Bismuth subcarbonate.....gr. 2
Magnesium carbonate, heavy..gr. 2
Calcium carbonate, precipitatedgr. 4

These substances are to be massed with the "rose vehicle." See under heading Troches for method of preparation.—Brit. Pharm.

Troches of Capsicum.

Each troche is to contain
Capsicumgr. 1
Sugargr. 12
Mucilage of tragacanth, to makea mass
—Eclectic.

Troches of Capsicum and Lobelia.

Each troche is to contain
Capsicumgr. 1
Oil of lobelia.....m. 1/10
Sugargr. 12
Mucilage of tragacanth, to makea mass
—Eclectic.

Troches, Carbolic Acid. (Phenol Troches.)

Each troche is to contain 1 grain of carbolic acid, which is to be massed with the "tolu vehicle." See under heading Troches for method of preparation.—Brit. Pharm.

Troches of Catchu.

These have been replaced in the U. S. P. by troches of gambir.

The troches of the Brit. Pharm. are made to contain each 1 gr. of catechu, which is to be massed with the "simple

vehicle." See under heading Troches for method of preparation.

Troches of Chalk.

Prepared chalk	gr. 375
Acacia, fine powder	gr. 105
Spirit of nutmeg	m. 45
Sugar, fine powder	gr. 600
Water, to make	a mass

Rub the powders with the spirit until well mixed, add the water, and divide the mass into 100 troches.—N. F. Appendix and U. S. P. 1890.

Troches of Croton Oil. (Trochisci Crotonis.)

Croton oil	m. 5
Starch	gr. 20
Sugar	gr. 60
Chocolate	gr. 120
Water	sufficient
Make into 30 troches.—Eclectic.	

Troches of Cubeb.

I.

Oleoresin of cubeb	gr. 30
Oil of sassafras	gr. 15
Acacia, fine powder	gr. 185
Ext. of licorice, fine powder ..	gr. 385
Syrup of tolu, to make	a mass

Rub the two powders together until well mixed, then add the oleoresin and oil, and incorporate them thoroughly; lastly, add the syrup, make a mass, and divide it into 100 troches.—U. S. P.

II. This is an example of the troches of the London Throat Hospital:

Cubeb, fine powder	gr. 60
Extract of licorice	gr. 350
Tragacanth, powder	gr. 20
Sugar, fine powder	gr. 60
Black-currant paste,	
Water, each	sufficient
Divide into 100 troches.	

Troches, Eucalyptus Gum. (Red Gum Troches.)

Each troche is to contain 1 grain of eucalyptus gum, which is to be massed with the "fruit vehicle."—Brit. Pharm.

See under heading Troches for method of preparation.

The eucalyptus gum is the so-called "red gum" from the bark of *Eucalyptus rostrata* and some other species of *Eucalyptus*, and is imported from Australia.

Troches of Gambir. (To Replace Troches of Catechu, U. S. P. 1890.)

Gambir, fine powder	gr. 90
Tragacanth, fine powder	gr. 30
Sugar, fine powder	av. oz. 2¼
Stronger orange flower water, to make	a mass

Rub the powders together until well mixed, then add the orange flower water enough to form a mass, which is to be divided into 100 troches.—U. S. P.

Troches of Ginger.

Tincture of ginger	m. 325
Tragacanth, fine powder	gr. 60
Sugar, fine powder	av. oz. 4½
Syrup of ginger, to make	a mass

Mix the tincture with the sugar, expose the mixture to the air until dry, then add the tragacanth, mix well, add the syrup, and divide the mass into 100 troches.—N. F. Appendix and U. S. P. 1890.

Troches, Guaica Resin.

Each troche is to contain 3 grains of guaiac resin, which is to be massed with the "fruit vehicle."—Brit. Pharm.

See under heading Troches for method of preparation.

Troches of Ipecac.

I.

Ipecac, No. 60 powder	gr. 30
Tragacanth, fine powder	gr. 30
Sugar, fine powder	av. oz. 2¼
Syrup of orange, to make	a mass

Rub the powders together until well mixed, add the syrup, and divide the mass into 100 troches.—N. F. Appendix and U. S. P. 1890.

II. The Brit. Pharm. troche contains ¼ grain of powdered ipecac, which is to be massed with the "fruit vehicle." See under heading Troches for method of preparation.

III.

Ipecac, fine powder	gr. 15
Elecampane, fine powder	av. oz. ¼
Sugar, fine powder	av. oz. 2½
Oil of anise	m. 8
Mucilage of tragacanth, to form	a mass

—Eclectic.

Divide into troches weighing 10 or 12 grains each.

Troches, Ipecac and Morphine.

See Troches, Morphine and Ipecac.

Troches of Iron.

Iron (ferric) hydrate, dried
at a temperature not ex-
ceeding 80 deg. C.....gr. 450
Vanilla, cut into slices.....gr. 15
Sugar, fine powder.....av.oz. 3½
Mucilage of tragacanth, to
makea mass

Triturate the vanilla, first, with a por-
tion of the sugar to a uniform powder,
and afterwards with the ferric hydrate
and the remainder of the sugar, until
well mixed. Then add the mucilage, and
divide the mass into 100 troches.—N. F.
Appendix and U. S. P. 1890.

See also Troches, Iron, Reduced.

Troches, Iron, Reduced.

The Brit. Pharm. troche contains 1
grain of reduced iron, which is to be
massed with the "simple vehicle." See
under heading Troches for method of
preparation.

See also Troches of Iron for another
kind of iron troche.

Troches of Licorice, Compound.

Ammonium chloridgr. 30
Morphine hydrochloridgr. 2
Acaciagr. 140
Sugargr. 140
Extract of licorice.....gr. 140
Oil of sassafras.....m. 10
Oil of stillingia.....m. 7
Tincture of tolu.....fl.dr. 1
Watersufficient

Reduce all the solids to very fine
powder, add the oils and tincture, mix
well, add enough water to make a mass,
and divide into 60 troches.—Eclectic.

Troches of Licorice and Opium.

Extract of licorice, fine pow-
dergr. 225
Opium, powderedgr. 7½
Acacia, fine powder.....gr. 180
Sugar, fine powder.....gr. 300
Oil of anise.....m. 3
(about drops 4)
Water, to make.....a mass
Triturate the powders together inti-

mately until well mixed, then incor-
porate the oil, add the water, and divide
the mass into 100 troches.—U. S. P.

See also Troches, Opium, which are
similar to the above.

Troches of Magnesia.

I.

Magnesia, lightgr. 300
Nutmeg, fine powder.....gr. 15
Sugar, fine powder.....gr. 900
Mucilage of tragacanth....sufficient

Rub the magnesia and the powders
together until they are thoroughly
mixed; then with mucilage form a mass,
to be divided into 100 troches.—N. F.
Appendix and U. S. P. 1880.

II.

Magnesiagr. 120
Sugar, powdergr. 640
Ginger, powder.....gr. 5½
Mucilage of tragacanth....sufficient

Divide into troches weighing 8 or 10
grains each.—Eclectic.

Troches, Morphine.

The Brit. Pharm. troche contains 1/36
grain of morphine hydrochlorid, which
is to be massed with the "tolu vehicle."
See under heading Troches for method
of preparation.

Troches of Morphine and Ipecac.

I.

Morphine sulfategr. 2½
Ipecac, No. 60 powder.....gr. 8
Oil of wintergreen.....m. 3
(about drops 4)
Sugar, fine powder.....av.oz. 2¼
Mucilage of tragacanth, to
makea mass

Rub the powders together until they
are thoroughly mixed, incorporate the
oil, add the mucilage, and divide the
mass into 100 troches.—N. F. Appendix
and U. S. P. 1890.

II.

Morphine hydrochlorid.....gr. 1/36
Ipecac, fine powder.....gr. 1/12
Mass with "tolu vehicle." See under
heading Troches for method of prep-
aration.—Brit. Pharm.

Troches, Opium.

Extract of opium.....gr.	10
Tincture of tolu.....m.	30
Acacia, powder.....gr.	120
Extract of licorice.....gr.	365
Sugar, fine powder.....av.oz.	2. gr. 100
Distilled water	sufficient

Add the extract of opium, first softened by means of a small amount of water, and the tincture of tolu, to the extract of licorice, which has been heated on a water bath. When the mixture is reduced to a proper consistence, remove it to a slab, add the sugar and acacia, previously rubbed together, mix the whole thoroughly, and make a mass with distilled water. Divide this into 100 troches and dry these in a hot-air chamber or other warm place at a moderate temperature.—Brit. Pharm. 1885.

See Troches of Licorice and Opium, which are similar to the above.

Troches of Peppermint.

Oil of peppermint.....m.	15
Sugar, fine powder.....av.oz.	2¾
Mucilage of tragacanth, to form	a mass

Rub the oil and sugar together until well mixed, add the mucilage, and divide the mass into 100 troches.—N. F. Appendix and U. S. P. 1890.

Troches of Podophyllin. (Troches of Resin of Podophyllum.)

Podophyllin	gr. 2
Extract of leptandra.....gr.	8
Oil of sassafras.....m.	6
Sugar	gr. 260
Mucilage of tragacanth....	sufficient

Make a mass and divide into 48 troches.—Eclectic.

If these troches are desired more active, 4 or 6 grains more of podophyllin may be added to the above amount.

Troches of Potassium Chlorate.

I.

Potassium chlorate, fine powder	gr. 225
Tragacanth, fine powder.....gr.	45
Sugar, fine powder.....gr.	450
Water, to make.....	a mass

Mix the sugar with the tragacanth by trituration in a mortar, then transfer

the mixture to a sheet of paper, and by means of a bone or horn spatula mix it with the potassium chlorate, being careful, by avoiding trituration or pressure, to prevent the mixture from igniting or exploding. Lastly add the water, and divide the mass into 100 troches.—U. S. P.

These are one-half the size and strength of the troches of the U. S. P. 1890.

II. The Brit. Pharm. troche contains 3 grains of potassium chlorate, which is to be massed with the "rose vehicle." See under heading Troches for method of preparation.

Troches, Red Gum.

See Troches, Eucalyptus Gum.

Troches of Rhatany. (Troches of Krameria.)

I.

Extract of rhatany.....gr.	90
Tragacanth, fine powder.....gr.	30
Sugar, fine powder.....av.oz.	2¼
Stronger orange flower water, to make.....	a mass

Rub the powders and extract together until reduced to a fine, uniform powder, add the water, and divide the mass into 100 troches.—U. S. P.

II. The Brit. Pharm. troche contains 1 grain of extract of rhatany, which is to be massed with the "fruit vehicle." See under heading Troches for method of preparation.

III. The following is the formula of the London Throat Hospital:

Extract of rhatany, powder..gr.	300
Tragacanth, powder	gr. 20
Sugar, fine powder.....gr.	80
Red-currant paste, to make..a mass	
Divide into 100 troches.	

Troches, Rhatany and Cocaine.

Extract of rhatany.....gr.	1
Cocaine hydrochlorid.....gr.	1/20

Make a mass with the "fruit vehicle" according to directions given under heading Troches, which see.—Brit. Pharm.

Troches of Rhubarb and Potassa.

Rhubarb	gr. 90
Potassium bicarbonate	gr. 45
Oil of peppermint.....	m. 6
Sugar	gr. 525
Mucilage of tragacanth.....	sufficient

Reduce the solids to powder, add the oil and enough mucilage to make a mass, and divide into 50 troches.—Eclectic.

Troches of Santonin.

I.

Santonin, fine powder.....	gr. 50
Tragacanth, fine powder.....	gr. 45
Sugar, fine powder.....	av.oz. 3
Stronger orange flower water, to make a mass.	

Rub the powders together until well mixed, then add the water, and divide the mass into 100 troches.—U. S. P.

Keep the troches in dark, amber-colored bottles.

The above formula is practically like that of the U. S. P. 1870.

II. The Brit. Pharm. troche contains 1 grain of santonin which is to be massed with the "fruit vehicle." See under heading Troches for method of preparation.

III. The Germ. Pharm. states that each troche is to contain $\frac{3}{8}$ gr. of drug.

Troches of Santonin, Compound.

Santonin	gr. 25
Resin of jalap.....	gr. 10
Acacia	gr. 30
Chocolate, pure	gr. 60
Sugar	gr. 160
Water	sufficient

Mix well, incorporate some water, make a mass, and divide into 64 troches or pills, which may be coated with sugar.

Gamboge or podophyllin may be substituted for the jalap resin.—Eclectic.

These are useful as a vermifuge. For a child from 3 to 6 years of age 2 to 4 may be used daily as long as required.

Troches of Sodium Bicarbonate.

I.

Sodium bicarbonate	gr. 270
Nutmeg, bruised	gr. 15
Sugar, fine powder.....	av.oz. 1, gr. 370
Mucilage of tragacanth, to make a mass.	

Triturate the nutmeg with the sugar, gradually added, until reduced to fine powder, and mix this intimately with the sodium bicarbonate; then add the mucilage, and divide the mass into 100 troches.—U. S. P.

II. The Brit. Pharm. troche contains 3 grains of sodium bicarbonate, which is to be massed with the "rose vehicle." See under heading Troches for method of preparation.

III.

Sodium bicarbonate	gr. 165
Ginger, powder	gr. 8
Sugar, fine powder.....	av.oz. 2
Mucilage of tragacanth.....	sufficient

Divide into troches weighing 10 or 12 grains each.—Eclectic.

Troches of Sodium Santoninate.

Sodium santoninate, fine powder	gr. 50
Sugar, fine powder.....	av.oz. $2\frac{1}{4}$
Tragacanth, fine powder.....	gr. 30
Orange flower water.....	sufficient

Rub the powders together until they are thoroughly mixed, then, with orange flower water, form a mass, to be divided into 50 troches.

Troches of sodium santoninate should be kept in dark amber-colored vials.—N. F. Appendix and U. S. P. 1880.

Troches of Stillingia, Compound.

Oil of stillingia.....	m. 6
Oil of prickly-ash berries.....	m. 24
Oil of sassafras.....	m. 24
Sugar	av.oz. 1
Mucilage of tragacanth.....	sufficient

Mix the oils with the sugar, add the mucilage, form a suitable mass, and divide into 48 lozenges.—Eclectic.

Troches, Sulfur.

Sulfur, precipitated	gr. 500
Potassium bitartrate, powder	gr. 100
Acacia, powder	gr. 100
Sugar, fine powder.....	gr. 800
Tincture of orange, Brit. Pharm.	m. 100
Mucilage of acacia.....	m. 100

Mix the tincture with the powders, add the mucilage and form a mass. Divide into 100 troches and dry these in a hot-air chamber or other warm place

at a moderate temperature.—Brit. Pharm.

Troches of Tannic Acid. (Tannin Troches.)

I.

Tannic acidgr. 90
 Tragacanth, fine powder.....gr. 30
 Sugar, fine powder.....av.oz. 2¼
 Stronger orange flower wa-
 ter, to make.....a mass

Rub the powders together until thor-
 oughly mixed, then gradually add the
 water, and divide the mass into 100
 troches.—U. S. P.

II. The Brit. Pharm. troche contains
 ½ grain of tannic acid, which is to be
 massed with the "fruit vehicle." See
 under heading Troches for method of
 preparation.

Troches of Wild Yam. (Troches of Dioscorea.)

Extract of wild yam.....gr. 100
 Gingergr. 50
 Oil of peppermint.....m. 5
 Sugargr. 550
 Mucilage of tragacanth....sufficient
 Made into 50 troches.—Eclectic.

Turpentine Venice, Factitious.

Gum turpentineav.oz. 10
 White resinav.oz. 3
 Oil of turpentinefl.oz. 10

Melt the resin, add the turpentine, al-
 low it to melt, then add the oil, and
 strain.

Vapors.

See Inhalations.

Varnishes, Skin or Dermatic.

Unna has recommended the following
 dermatic varnishes, which are intended
 to form a smooth, adherent, artificial
 skin, that may be medicated by various
 substances. These have been worked
 out with the assistance of Beiersdorf.
 Some of these varnishes are aqueous in
 character, others are alcoholic.

Bassorin Varnish.

Unna recommends bassorin as a basis
 for these varnishes, which is to be ob-
 tained from tragacanth. 2¼ av.ounces
 of powdered gum are to be rubbed with
 water to a thin magma, and the mix-
 ture filtered through a filter heated by

steam which retains cellulose, etc., and
 permits the mucilage to pass through.
 The latter is then evaporated so as to
 weigh 15 av.ounces, and finally mixed
 with glycerin.

The same kind of varnish may also
 be obtained from salep. 384 grains of
 this, in very fine powder, triturated with
 16 fluidounces of cold water to a
 smooth mixture, and then heated for
 half an hour in a steam bath, yield a
 preparation similar to the preceding.
 Glycerin should be added to this like-
 wise.

Both of these bassorin varnishes form
 admirable vehicles for zinc oxid.

Casein Varnish.

The casein required for these prepa-
 rations may be obtained in the follow-
 ing manner:

Milk deprived of fat (skim-milk) is
 warmed at a temperature of 35 to 40
 deg. C. with a small amount of rennet
 or rennet essence until it coagulates,
 and is then placed on a strainer. The
 coagulated mass is washed, first with
 common, then with distilled, water, un-
 til the washings no longer have an acid
 reaction, finally dried and reduced to
 powder. This powder has a yellowish-
 white color, is quite hard, feeling like
 sand, insoluble in water, but soluble in
 all alkaline liquids, forming a limpid
 liquid. Glacial acetic acid as well as
 lactic acid causes it to swell. The alka-
 line solutions, though they pass when
 highly diluted completely through filter
 paper, are not clear, but milky.

The best alkali for dissolving the
 casein is borax. The largest proportion
 of borax which can be added without
 crystallizing out is stated to be 1 part
 for every 1 part of casein and 25 parts
 of water. But casein is dissolved in
 presence of much smaller quantities of
 borax. The best varnish was obtained
 by using the following proportions:

Casein, dried as above....av.oz. 3
 Boraxgr. 160
 Waterfl.oz. 14½

This solution dries rapidly and yields

a handsome, homogeneous, firm coating, very suitable for holding such medicinal agents as resorcin, pyrogallic acid, chrysarobin, etc.

It has one drawback, namely, that it does not long hold substances like zinc oxid, bismuth salts, white precipitate, etc., in suspension, and that by their precipitation the adhesiveness of the varnish is injured. This was found to be particularly the case with zinc oxid.

Beiersdorf, however, ascertained that this may be prevented by glycerin. Casein is retained by glycerin in form of emulsion, if it has previously been dissolved in ammonia and the latter has been allowed to evaporate completely. This does not injure the adhesive property of the casein. The mode of procedure is as follows:

Casein	av.oz. 1
Ammonia water, strongest (28 p. c.)	av.oz. 3 or 3½
Glycerin	av.oz. 1
Water, boiling	sufficient

Dissolve the casein, in the cold, in the ammonia water, add the glycerin, and apply a gentle heat until the ammonia is all dissipated. Then dissolve the residual mass in twice its weight of boiling water on a bath.

This Glycerin-Casein Varnish is very elastic, dries well, forms an excellent coating, and can be combined with a great variety of remedies. Zinc oxid does not separate so quickly from it.

All of the before-mentioned varnishes, after being applied to the skin, may be easily removed by washing with water—most easily the last-mentioned one.

Alcoholic Balsam and Resin Varnishes.

1. *Amber Varnish*, for which the ordinary or commercial amber varnish may be used after diluting it if necessary with alcohol to suitable consistence; or it may be prepared by dissolving amber in a mixture of alcohol and oil of turpentine. It must not be used for zinc oxid, but is very suitable for chrysarobin and pyrogallic acid.

2. *Castor Oil and Shellac Varnish*, prepared from 5 av.ounces of shellac, 1 av.ounce of castor oil, and 17½ fluid-ounces of alcohol.

3. *Balsam Fir and Collodion Varnish*, prepared from 1 part by weight of balsam of fir and 16 parts of collodion. This is excellent for chrysarobin, not so good for pyrogallic acid, very poor for mercuric oxid.

4. *Castor Oil and Collodion Varnish*, prepared from 1 part by weight of castor oil and 8 parts of collodion. This is very good for zinc oxid, as it may be made to hold one-ninth its weight of this compound.

5. *Lead Ricinoleate Varnish*, prepared by heating 1 part by weight of lead oxid with 1½ parts of castor oil until saponified, lead ricinoleate being formed. This is then almost entirely dissolved upon the addition of 2 parts by weight of absolute alcohol. Large quantities of zinc oxid may be incorporated with this varnish.

The following examples are given, to show how these varnishes may be combined with various remedies:

Ichthyol-Casein Varnish:

Sodium-ichthyol	part 1
Borax-casein varnish	parts 3

Sulfur-Casein Varnish:

Sulfur	part 1
Glycerin-casein varnish	parts 3

Zinc Oxid-Salep-Bassorin Varnish:

Zinc oxid	part 1
Salep-bassorin varnish	parts 9

Zinc-Ichthyol-Tragacanth-Bassorin Varnish:

Zinc oxid	parts 2
Sodium-ichthyol	part 1
Tragacanth-bassorin varnish	parts 17

Chrysarobin Amber Varnish:

Chrysarobin	part 1
Amber varnish, commercial	parts 20

Pyrogallol-Shellac Varnish:

Pyrogallic acid	part 1
Shellac	parts 5
Castor oil	part 1
Absolute alcohol	parts 15

Salicylic Acid Collodion Varnish:

Salicylic acid	parts 3
Balsam of fir.....	part 1
Collodion	parts 16

Zinc Oxid Collodion Varnish:

Zinc oxid	part 1
Castor oil	part 1
Colodion	parts 8

Zinc and Lead Ricinoleate Varnish:

Zinc oxid	parts 8
Lead ricinoleate (as above).....	parts 4
Absolute alcohol	parts 8

One part each of collodion and stronger ether may be added to this to promote rapid drying.

All parts above are by weight.

Vinegars (Aceta).

These are preparations made by extracting drugs with diluted acetic acid, the preparations of the U. S. P. representing 10 per cent. of drug.

Vinegar of Bloodroot.

Bloodroot, No. 30 powder.....	av.oz. 1½
Diluted acetic acid, to make.....	fl.oz. 14½

Moisten the drug with 6 fluidrams of the acid, pack it firmly in a conical glass percolator, and gradually pour on diluted acetic acid until 16 fluidounces of percolate are obtained.—N. F. Appendix and U. S. P. 1880.

Vinegar of Cantharides.

Cantharides, bruised	av.oz. 1¾
Glacial acetic acid, Distilled water, each, to make	fl.oz. 16

Mix the acid and water in equal volumes, macerate the drug with 14½ fluidounces of this mixture for 24 hours, and transfer to a percolator. When the liquid ceases to pass, pour on enough of the same menstruum to make 16 fluidounces of product.—Brit. Pharm.

Vinegar of Colchicum.

Colchicum root, moderately fine powder	gr. 480
Diluted acetic acid, to make.	fl.oz. 16

Extract the drug by percolation.

—U. S. P. 1860.

Vinegar of Ipecac.

Fluid extract of ipecac, of the Brit. Pharm.....	fl.dr. 6½
Alcohol	fl.dr. 13
Water	fl.oz. 4
Diluted acetic acid, to make.....	fl.oz. 16

Mix, filter, and if necessary add enough diluted acetic acid to make 16 fluidounces of filtrate.—Brit. Pharm.

Vinegar of Lobelia.

I. The N. F. Appendix and U. S. P. 1880 preparation is prepared like vinegar of bloodroot.

II.

Lobelia seed, powder.....	av.oz. 2
Diluted acetic acid.....	fl.oz. 16
Alcohol or concentrated acetic acid	fl.oz. 4

Mix the drug with the diluted acetic acid, macerate for 7 days, agitating occasionally, express, and filter. To the filtrate add the alcohol or concentrated acid, and then enough diluted acetic acid to make 16 fluidounces.—Eclectic.

Vinegar of Opium. (Black Drop—Lancaster or Quaker Black Drop.)

Opium, powder	gr. 730
Nutmeg, No. 30 powder.....	av.oz. ½
Sugar	av.oz. 2..gr. 150
Diluted acetic acid, to make	fl.oz. 16

Macerate the opium and nutmeg in 8 fluidounces of acid for 7 days, agitating frequently, strain with expression through muslin of close texture, and express the liquid. Mix the residue with 3¼ fluidounces of acid to a uniform magma, express again as before. Mix the two liquids, filter, dissolve the sugar in the filtrate by agitation, and add enough acid through the filter to make the filtrate measure 16 fluidounces.—U. S. P.

Vinegar of Squill.

I.

Squill, No. 20 powder.....	av.oz. 1¾
Diluted acetic acid, to make.....	fl.oz. 16

Macerate the squill with 14½ fluidounces of acid for 7 days, agitating frequently, strain with expression through muslin, wash the mass on the strainer with enough diluted acetic acid to make

the total colature measure nearly 16 fluidounces. Heat this liquid to boiling, filter while hot, and when cooled add enough diluted acetic acid to make 16 fluidounces.—U. S. P.

II.

Squill, bruisedav.oz. 2..gr. 35

Diluted acetic acid, Brit.

Pharm.fl.oz. 16 or sufficient

Mix the drug and acid, macerate for 7 days, agitating occasionally, strain with expression, and filter. The product should measure 16 fluidounces.—Brit. Pharm.

The diluted acetic acid of the Brit. Pharm. may be made by mixing 11½ fluidounces of U. S. P. diluted acetic acid with 4½ of water or by mixing 15 fluidrams of U. S. P. or 36 per cent. acetic acid with enough water to make 16 fluidounces.

III.

Squill, cutav.oz. 1¾

Alcoholfl.oz. 2

Acetic acid, 36 p. c.fl.oz. 2½

Distilled waterfl.oz. 12½

Mix all, macerate in a bottle for 3 days, agitating frequently, then strain without much expression, and filter the liquid after 24 hours.—Germ. Pharm.

Vinegar, White Wine, Imitation.

The following makes a good imitation of white wine:

Acetic acidfl.oz. 16

Tartaric acidav.oz. 1

Acetic etherfl.dr. 4

White winefl.oz. 16

Waterfl.oz. 32

Washes.

See Lotions.

Water (Aqua).

The U. S. P. defines "aqua" as "potable water in its purest obtainable state" and describes it as "a colorless, limpid liquid, without odor or taste at ordinary temperatures, and odorless when heated." It should be perfectly neutral to litmus paper and must be free from metallic impurities and not possess more than the "limit" of ammonia, soluble salts, sulfates, chlorids, nitrates and organic or other oxidizable

matters, which "limits" are determined by certain chemical tests.

Obviously therefore not every natural or even potable water is suitable for pharmaceutical purposes, and when the matter is studied closely it will be found that but few, if any, natural waters are suitable. All natural waters contain impurities, the latter being sometimes so abundant as to preclude the use of the water for any purpose, pharmaceutical or domestic, until it has undergone some form of purification. The question of a pure water supply is almost always an urgent as well as vital one, especially to densely populated cities.

The impurities of natural water are mineral and organic, the former including various salts, such as chlorids, sulfates, nitrates and phosphates, the latter free and albuminoid ammonia, other sewage contaminations, and germs. Of these, the germs, including among them those causing typhoid fever, cholera, diphtheria, and other infectious diseases, are the only really dangerous or fatal ones, the other impurities being dangerous only in so far as they furnish pabulum for the germs. The harmfulness or harmlessness of the impurities present in water can not be judged by the presence or lack of odor, taste, clearness, etc., as a bad-smelling, bad-tasting, turbid water may be practically harmless, whereas a clear, odorless, and tasteless water may be reeking with germs.

Natural water may be purified in various ways as by subsidence, by filtration, by boiling, by precipitation or by distillation.

1. *Subsidence*.—Some waters may be purified, partially at least, by allowing the water to stand until solid matter has subsided, when the clear liquid may be decanted and used. This method is practical only for waters containing large quantities of mud or clay; it would not suffice to remove germs.

2. *Filtration*.—The filtration referred to is through one of the numerous charcoal or earthenware filters of the

market. It is true that water filtered through such an apparatus is of unusual clearness and brightness, but this should not be considered a guaranty of freedom from impurities, either organic or mineral. The filter merely intercepts the larger particles of suspended matter but permits the smaller particles, including the germs to pass through. Water filtered in this manner therefore contains practically all the original mineral and organic impurities. It is true that the first portions of water which have passed may be deprived of some of the organisms, but, unless the interior of the filter is thoroughly cleansed, this very stoppage of germs and a portion of other organic matter will cause a rapid multiplication of germs with the result that the filtered water will be even more tainted than the unfiltered water.

3. *Boiling*.—This method of purification is the best one mentioned so far, provided the boiling has been continued sufficiently long. Boiling effects several changes in water; it expels gases; it causes precipitation of the calcium carbonate if this has been held in solution by carbonic acid gas; and it will cause destruction of all germs. A well-boiled water (if boiled for about 5 to 10 minutes) is therefore perfectly safe for domestic purposes, but may not be satisfactory for pharmaceutical or chemical purposes.

After boiling and cooling, the water should be filtered, either through paper or an earthenware filter.

4. *Precipitation*.—The simplest, oldest and best known method of purification of water by precipitation is by means of alum; 15 to 30 grains of alum are to be added to a gallon of water, agitating until the salt is dissolved, then setting aside. The amount of alum to be used depends on the degree of impurity of the water, very impure waters requiring more alum than those less impure. After standing for some time (from 15 minutes to several hours, although over night is better), depending

also on the degree of impurity, the clear water may be decanted from the sediment or it may be filtered.

Instead of adding alum itself to the water, a ready-prepared solution of alum, about 1 av.ounce to 1 pint, may be used instead.

This is said to make a quite pure water almost free from germs, but whether absolutely free from the latter is still a question.

Instead of the alum, nascent calcium sulfate may be used, as follows: Add 60 grains of precipitated chalk to a gallon of water, agitate, then add 6½ fluidrams of diluted sulfuric acid, agitate, set aside for 12 or 24 hours, and then use the clear liquid.

Keletzinsky's (Vienna, Austr.) method of purification of water has been highly recommended. It is as follows:

Aluminum phosphate	part 1
Ferrous phosphate	parts 2
Magnesium phosphate	parts 2
Phosphoric acid,	
Distilled water, each.....	sufficient

Mix the acid and water in the proportion of 1 part of 85 p. c. acid with 4 parts of water or 1 part of 50 p. c. acid with 2 parts of water. The freshly prepared phosphates of aluminum, iron and magnesium are to be dissolved in sufficient of a mixture of the phosphoric acid and water, solution being aided by a gentle heat. This solution should be filtered through paper. When finished the solution can be kept on hand for any length of time.

When required as a purifying agent for water, the solution is to be added in small quantities at a time to the water until no further cloudiness is produced; let the mixture stand to allow the precipitate to subside, and use the clear water.

The mixture acts thus: The lime salts usually contained in water will abstract from the phosphates of aluminum, iron and magnesium a portion of the phosphoric acid to form calcium phosphate, and the compounds now

formed will be at once thrown out of solution. The magnesium will absorb all the free ammonia, the ferrous oxid will combine with the sulphuretted hydrogen and other gases of decomposition, while the alumina and calcium phosphate will carry the suspended particles of impurity with them. A slight excess of the phosphatic solution is in no way objectionable.

Hager uses this so-called "tincture of tannin" to make impure water potable:

Tannic acid	gr. 120
Sugar	gr. 60
Distilled water	fl.dr. 3
Alcohol	fl.dr. 6

Mix and dissolve.

Use 10, 15 or 20 drops to a glassful of water.

A method which has been recommended of purifying water with bromin is as follows:

Bromin	gr. 90
Potassium bromid	gr. 90
Distilled water, to make.....	fl.oz 1

Mix and dissolve.

Add 12 drops of this solution to 1 gallon of water, shake, and after 5 minutes, add 12 drops of 10 p. c. ammonia water. When the water is very impure and strongly calcareous, so much bromin solution should be used as will impart a yellowish tint to the water which will persist for one-half minute.

The product is a limpid, tasteless liquid, practically free from germs.

A method of purification of water which has been recommended when the water is intended for making hypodermic solutions and which is said to make a product even superior to that prepared by distillation, is as follows:

Treat one gallon of boiled water with small portions, at a time, of potassium permanganate solution (1 gr. to 8 fl.oz.) until after standing for an hour it retains its pink color. Then add 5 grains of alum, shake until the pink color disappears, and filter three times through double filters which have previously

been scalded to render them sterile. The process should be conducted in well-closed glass containers.

5. *Distillation*.—Distilled water is the only water really suitable for pharmaceutical and chemical purposes, but still not all distilled water is good water. In selecting the apparatus, there is considerable choice. There are many distilling apparatuses on the market, and anyone may also arrange his own distilling apparatus by connecting a vessel suitable for a still with a condenser, preferably using a Liebig condenser.

No continuous process of distillation should be used but the U. S. P. method should strictly be followed, viz.:

Water	volumes 1000
To make	volumes 800

Distil the water from a suitable apparatus provided with a block-tin or glass condenser. Collect the first 100 volumes, and throw this portion away. Then collect 800 volumes and keep the distilled water in glass-stoppered bottles which have been rinsed with hot distilled water immediately before being filled.

The still is then to be cleansed and refilled if more distilled water is desired, the process of distillation being conducted as before.

The first 100 volumes contain the volatile gases, including the free ammonia; the remaining 100 volumes contain the solid matter.

A fairly pure natural water should be used for making distilled water.

Distilled water, no matter how carefully prepared, may have a peculiar disagreeable odor and taste. This may be due to the use of a tin distilling apparatus, to the use of rubber connections, or to the use of the distilling apparatus for distilling all kinds of substances. Only glass, block tin or heavy tinned copper distilling apparatus should be used, rubber connections should be avoided as much as possible, and the still should be reserved for the making of distilled water only.

Even with the utmost care, distilled water is not absolutely pure water. Distilled water may be further purified by adding to it enough potassium permanganate to impart a pink tinge, then making it alkaline with caustic potash, and then heating in an open vessel until about 1/20 of the water has evaporated, when all the ammonia will have been dissipated; the remaining water is then to be redistilled. If the water still contains ammonia add enough potassium or sodium acid sulfate to "fix" the latter, and redistil.

Waters. (Medicated Waters.)

The U. S. P. states that the medicated waters, when prepared from volatile oils are intended to be, as nearly as practicable, saturated solutions which must be clear, and free from solid impurities. In the processes which follow, the solution of the volatile oils is facilitated by the use of purified talc (the U. S. P. 1890 directed precipitated calcium phosphate); but the solution may, if preferred, be aided by replacing the talc by pulped or shredded filter paper; waters may also be made by the addition of volatile oils to hot water and separation of the excess of the former, or by distillation of the drug or volatile oil with water, if by either of these methods the finished product corresponds in all respects with official requirements.

Water, Acorn, Rademacher's. (Aqua Glandium—Aqua Quercus—Aqua Quercus Glandium.)

Acorns, deprived of the hard outer hulls, coarse powderav.oz. 10¼
Alcoholfl.oz. 3
Watersufficient

Mix and then distil on a water bath so as to obtain 15½ av.ounces of distillate.—H.

Water, Anise.

Oil of anise.....m. 15
Purified talcgr. 115
Distilled water, to make..fl.oz. 16

Triturate the oil with the talc, add the water gradually with continued trituration, filter, and pass the filtrate through the filter repeatedly until the water is clear.—U. S. P.

In the Brit. Pharm. it is directed to mix 6¾ av.ounces of anise with one gallon of water and to distil one-half gallon from this.

Water, Aromatic. (Wind Wasser—Kinder or Mutter Balsam.)

This may be conveniently prepared as follows:

Oil of fennel	drops	7
Oil of lavender flowers...	drops	7
Oil of mace.....	drops	7
Oil of peppermint.....	drops	7
Oil of rosemary.....	drops	7
Oil of ginger.....	drops	7
Oil of sage.....	drops	7
Oil of clove.....	drops	14
Oil of cassia.....	drops	14
Oil of lemon.....	drops	14
Alcohol	fl.oz.	10½
Water	fl.oz.	5½

Mix the oils with the alcohol, add the water, let stand 3 days, agitating occasionally, then filter clear.—H.

Waters, Aromatic, Concentrated.

The so-called "concentrated aromatic waters," more common in Germany than here, are merely alcoholic solutions of the volatile oils (except the imported orange-flower and rose waters and concentrated chamomile water; see Water, Chamomile, Concentrated).

Water, Bitter Almond.

I.

Oil of bitter almond.....m. 8 ..
(or about drops 10)
Distilled waterfl.oz. 16

Dissolve the oil in the water by agitation and filter through a well-wetted filter.—U. S. P.

II.

Bitter almonds, coarse powderav.oz. 16
Water, alcohol, each.....sufficient

Express the almonds so as to remove as much of the fixed oil as possible, powder the press cake, mix this with 25½ fluidounces of water, and distil in such a way that steam will pass through

this mixture. Cool the condenser and receiver very carefully and collect 12 av.ounces of distillate in a receiver which contains 4 av.ounces (4¾ fluid-ounces) of alcohol. The mixture of distillate and alcohol is to be assayed and then diluted with a mixture of 2 volumes of alcohol and 5 of water so that the product shall contain 1/10 per cent. of absolute hydrocyanic acid.—Germ. Pharm.

Water, Bitter Almond, Diluted.

Bitter almond water.....fl.oz. 1
Distilled waterfl.oz. 19
—Germ. (1st) and Austr. Pharms.

Water, Bromin.

This may be prepared according to the N. F. by mixing bromin with 30 times its weight of water, agitating occasionally during several hours, and then decanting the water from the undissolved bromin.

Water, Camphor.

I.
Camphor gumgr. 60
Alcoholfl.dr. 1
Purified talcgr. 115
Distilled water, to make..fl.oz. 16
Dissolve the camphor in the alcohol, triturate the solution with the talc, and after allowing the greater portion of the alcohol to evaporate spontaneously, continue the trituration with the water gradually added; then pour the mixture upon a well-wetted filter, and pass the filtrate through the filter repeatedly until the water comes through clear.—N. F.

II.

Camphorgr. 7½
Alcoholsufficient
Distilled waterfl.oz. 16
Dissolve the camphor in enough alcohol to make 25 minims of solution, add this in successive portions to the distilled water, shaking after each addition, finally agitate occasionally until all the camphor is dissolved.—Brit. Pharm.

Water, Caraway. (Aqua Carui.)

Mix 6¾ av.ounces of caraway seed

with 1 gallon of water and distil off ½ gallon.—Brit. Pharm.

A quicker process is to triturate 15 drops of oil of caraway with ½ av.ounce of purified talcum until well mixed, then add 16 fluidounces of distilled water, macerate for 6 hours, and filter.

Water, Carbolized.

I.

Glycerite of carbolic acid,
U. S. P. 1890.....fl.oz. 1½
Water, to make.....fl.oz. 16
—U. S. P. 1870.

If it is not desired to keep the glycerite on hand, the above may be prepared (approximately) from 2 fluidrams of carbolic acid in the fluid form, as it is usually kept on hand by pharmacists for dispensing purposes, 1 fluidounce of glycerin, and enough water to make 16 fluidounces.

II.

Carbolic acid, liquefied..
.....fl.dr. 3 or gr. 160
Distilled water, to make...fl.oz. 16
—Germ. Pharm.

Water, Carminative. (Aqua Carminativa.—Wind Wasser.)

This may be prepared by the following easy process:

Oil of orange peel.....drops 7
Oil of caraway.....drops 7
Oil of lemon.....drops 7
Oil of fennel.....drops 7
Oil of coriander.....drops 7
Oil of spearmint.....drops 7
Alcoholfl.oz. 1¼
Chamomile waterfl.oz. 14½

Mix the oils with the alcohol, add the water and filter.—H.

Water, Castor, Rademacher's. (Aqua Catorei.)

Canadian castor, cut fine..av.oz. 2½
Alcoholfl.oz. 2
Waterfl.oz. 28¾

Mix, digest for 12 hours, then distil on a water bath so as to obtain 15 av.ounces of distillate.—H.

Water, Chamomile.

Chamomile, Germangr. 730
Waterfl.oz. 48

Mix, macerate for 24 hours, and distil off 16 fluidounces.—Austr. Pharm.

A quicker process is to triturate 3 drops of oil of chamomile with $\frac{1}{2}$ av.-ounce of purified talcum until well mixed, then add 16 fluidounces of distilled water, macerate for 6 hours, and filter. It may also be prepared by diluting the concentrated chamomile water which is commercially available.

Water, Chamomile, Concentrated.

The preparation known by this name may be prepared as follows:

Chamomile, German,	
bruised	av.oz. 16
Alcohol	fl.oz. 4
Water	sufficient

Mix the chamomile with the alcohol, allow to stand for an hour in a closed vessel, place the mixture on the sieve of a distilling apparatus, and pass steam through the drug until 16 fluidounces of distillate have been obtained.—D.

The chamomile water may be prepared from this by diluting it with 9 times its volume of distilled water.

Water, Cherry. (Aqua Cerasorum Nigrorum.)

The water known by this name may be prepared as follows (D.):

Bitter almond water.....	fl.dr. 7
Distilled water, to make...	fl.oz. 16

Water, Cherry-Laurel. (Aqua Lauro-Cerasi.)

I. The genuine water is made by distilling fresh cherry-laurel leaves with water. The tree grows in Europe and the water is imported into the United States. It is variable in character and hence the following formula by W. H. Pile for a factitious cherry-laurel water finds favor because yielding a uniform product:

Diluted hydrocyanic acid....	m. 320
Oil of bitter almond.....	m. 16
(about drops	20)
Alcohol	fl.oz. 2
Distilled water, to make...	fl.oz. 16

Dissolve the oil in the alcohol, add the acid and then the water.

II. The formula of the Brit. Pharm. is as follows:

Cherry-laurel leaves, fresh..	fl.oz. $13\frac{1}{4}$
Water	fl.oz. 40

Place the crushed drug with the water in a retort; distil 16 fluidounces of liquid; shake the product; filter if necessary; and adjust the product either by addition of hydrocyanic acid or of water so that the product shall contain 1/10 per cent. of hydrocyanic acid.

Water, Chlorin.

I. The present U. S. P. has discarded the old-time chlorin water made by distillation of black oxid of manganese with hydrochloric acid and in its stead recognizes a "compound solution of chlorin," which is to be dispensed whenever chlorin water is demanded.

Its formula is as follows:

Potassium chlorate, granu-	
lated	gr. 36
Hydrochloric acid	m. 140
Distilled water, to make...	fl.oz. 16

Add the acid, diluted with $2\frac{1}{2}$ fluidrams of distilled water, to the potassium chlorate contained in a flask of the capacity of about 32 fluidounces. Insert in the flask a stopper perforated to admit a funnel of the capacity of about 2 fluidounces containing about 75 grains of absorbent cotton well wetted with cold water; place the flask on a water bath containing boiling water, for a period of from 2 to 3 minutes; when the flask is completely filled with a greenish-yellow gas, remove it from the bath and add cold distilled water through the cotton in the funnel in two separate portions of 8 fluidounces each. After the addition of each separate portion of cold distilled water, stopper the flask securely, invert it, and thoroughly agitate the contents.

The hydrochloric acid used in making this preparation should be of U. S. P. strength, 32 per cent. of absolute acid. If weaker, proportionately more of it must be used.

This solution should be freshly made when wanted. Even when preserved from light and air, it deteriorates.

This solution is described by the U. S. P. as an aqueous solution, containing, when freshly prepared, about 0.4 per

cent. of chlorin with some oxids of chlorin and potassium chlorid.

Water, Chloroform.

I.

Chloroform,

Distilled water, each.....sufficient

Add enough chloroform to a convenient quantity of distilled water, contained in a dark amber-colored bottle, to maintain a slight excess of the former, after the contents have been repeatedly and thoroughly agitated.—U. S. P. and N. F., 1st edition.

About 50 minims of chloroform will dissolve in 1 pint of water.

When chloroform water is required for use, pour off the needed quantity of the solution, refill the bottle with distilled water and saturate it by thorough agitation, taking care that there be always an excess of chloroform present.

This preparation, aside from its medicinal properties, is an efficient preservative agent, and forms a good solvent, in place of water, for preparing solutions which are to be kept free from micro-organisms.

II.

Chloroformm. 20

Distilled waterf.oz. 16

Agitate together until the chloroform is dissolved.—Brit. Pharm.

This contains one-half the chloroform present in the preparation of the Brit. Pharm. of 1885.

Water, Cinnamon. (Cassia Water.)

I.

Oil of cassia cinnamon.....m. 15

Purified talcgr. 115

Distilled water, to make..f.oz. 16

Triturate the oil with the talc, add the distilled water gradually under continued trituration, filter, and pass the filtrate repeatedly through the filter until the water comes through clear.—U. S. P.

II.

The Brit. Pharm. preparation is made by mixing $6\frac{3}{4}$ av.ounces of bruised cinnamon bark with one gallon of water and distilling off one-half gallon.

III.

Cassia cinnamon, coarse pow-

derav.oz. $3\frac{1}{4}$

Alcoholf.oz. $3\frac{3}{4}$

Water, common, sufficient.

Mix the drug with the alcohol and enough water, macerate for 12 hours, then distil off 32 fluidounces. The amount of water is not specified.

The product is said to be turbid at first, later becoming clear.—Germ. Pharm.

Water, Cresol.

Saponated solution of cresol.av.oz. 1

Waterav.oz. 9

—Germ. Pharm.

For disinfecting purposes, common water may be used, but for medicinal or surgical purposes, distilled water only should be used. When ordinary water is used, a slightly turbid solution is obtained but with distilled water the solution is perfectly clear.

The product contains 5 p. c. of crude cresol.

Water, Creosote.

Creosotem. 80

Distilled waterf.oz. 16

Agitate the creosote vigorously with the water and filter through a well-wetted filter. It should be freshly prepared when dispensed.—U. S. P.

Water, Dill. (Aqua Anethi.)

Dill fruit (seed).....av.oz. $6\frac{3}{4}$

Watergal. 1

Mix and distil off one-half gallon.

—Brit. Pharm.

This may be more conveniently prepared by triturating 15 drops of oil of dill with $\frac{1}{2}$ av.ounce of purified talcum until well mixed, adding 16 fluidounces of distilled water, macerating for 6 hours, and filtering.

Water, Distilled.

See under heading Water.

Water, Elder-Flower. (Aqua Sambuci.)

Elder flowers, fresh.....av.oz. $16\frac{3}{4}$

Waterf.oz. 80

Mix and distil 16 fluidounces.—Brit. Pharm.

Instead of the fresh elder flowers, an equivalent quantity of elder flowers, preserved, while fresh, with common salt, may be used. The salt-preserved flowers are commercially available.

Water, Fennel. (Aqua Fœniculi.)

I.

Oil of fennel.....m. 15
Purified talcgr. 115
Distilled water, to make...fl.oz. 16

Triturate the oil with the talc, add the distilled water gradually with continued trituration, filter, and pass the filtrate through the filter repeatedly until the water comes through clear.—U. S. P.

The preparation of the Brit. Pharm. is made by mixing $6\frac{3}{4}$ av.ounces of fennel with one gallon of water and distilling half a gallon.

II.

Fennel, bruisedav.oz. 2, gr. 60
Watersufficient
Mix and distil 64 av.ounces of liquid.

—Germ. Pharm.

Water, Lime. (Solution of Lime—Solution of Calcium Hydroxid—Liquor Calcis—Aqua Calcis or Calcariae.)

I.

This is a saturated aqueous solution of calcium hydrate prepared by slaking 90 grains of lime by the very gradual addition of $6\frac{1}{2}$ fluidounces of distilled water, and agitate occasionally during one-half hour. Allow the mixture to settle, decant the liquid, throw the latter away, to the residue add 58 fluidounces of distilled water; agitate thoroughly, let the mixture stand for 24 hours, agitate again, then let the coarser particles of solid matter subside, and pour the liquid, holding the undissolved lime in suspension, into a glass-stoppered bottle. From time to time shake the bottle so as to keep the solution saturated. Pour off the clear liquid when it is wanted for use.

The lime for this purpose should not be common building lime, but should be prepared from marble or chalk. Lime

or calcium oxid made from marble may be purchased in the market.

The product should contain not less than 0.14 per cent. of pure calcium hydroxid. The percentage of the latter present varies with the temperature at which the solution is prepared, being about 0.17 per cent. at 15 deg. C., the percentage diminishing as the temperature rises.

II.

Calcium hydroxid (slaked lime)gr. 365
Distilled watersufficient

Wash the lime with distilled water until free from chlorids, then agitate it in a green glass bottle with one-half gallon of distilled water for 2 or 3 minutes, and set aside for 12 hours.—Brit. Pharm.

The clear solution may be drawn off with a siphon as it is required for use, and should be transferred to a green glass bottle.

Slaked lime may be prepared by slaking quicklime with one-third its weight of water.

III.

Quicklimeav.oz. 1
Distilled watersufficient

Slake the lime with 4 fluidounces of the water, then add 48 fluidounces more of water, mix well, let stand for several hours, then decant the supernatant liquid, to the residue add 48 fluidounces more of water, transfer to a bottle, and keep in a cool place.—Germ. and Austr. Pharms.

IV. For the corresponding homeopathic preparation, see Solution of Calcium Hydrate.

Water, Linden. (Aqua Tiliæ.)

Linden flowers, dry.....av.oz. $1\frac{1}{2}$
Or fresh flowers.....av.oz. $7\frac{1}{2}$
Waterfl.oz. 32

Mix and distil 16 fluidounces.—D. modified.

Linden flowers are derived from our common basswood tree.

Water, Nux Vomica, Rademacher's.
(Aqua Nucum Vomicarum—Aqua
Strychni Seminis—Aqua Strych-
ni.)

Nux vomica, cut into small
piecesav.oz. 10¾
Alcoholfl.oz. 1½
Watersufficient
Mix, macerate for 24 hours and distil
16 av.ounces.—H.

**Water, Orange-Flower. (Aqua Naphæ
—Aqua Aurantii Florum.)**

Stronger orange-flower water,
Distilled water, each, equal volumes

The stronger water to be used for this
purpose is the imported so-called triple
orange-flower water.—U. S. P.

These waters should be kept in loose-
ly stoppered bottles in a dark place, pref-
erably also in a cool location.

According to the Brit. Pharm., the
stronger water is to be diluted with
twice its volume of distilled water.

Water, Ozonized.

A solution of 15 to 30 grains of potas-
sium permanganate in 16 fluidounces of
distilled water has been known by this
name.

**Water, Pennyroyal. (Aqua Hedeo-
mæ.)**

Oil of pennyroyalm. 15
Magnesium carbonategr. 30
Distilled waterfl.oz. 16

Triturate the oil with the carbonate,
then add the water, and filter.—Eclectic.

Water, Peppermint.

I.

Oil of peppermint.....m. 15
Purified talcgr. 115
Distilled water, to make. fl.oz. 16

Triturate the oil with the talc, add the
water gradually with continued tritura-
tion, filter, and pass the filtrate through
the filter repeatedly until the water
comes through clear.—U. S. P.

II.

Oil of peppermint.....m. 30
Waterfl.oz. 96

Mix and distil 64 fluidounces.—Brit.
Pharm.

III.

Peppermint herb, cut coarse.av.oz. 6½
Watersufficient

Mix and distil 64 av.ounces.—Germ.
Pharm.

Water, Phosphoric.

This preparation, used by homeopaths
and eclectics, is water in which phos-
phorus has been macerated, as for ex-
ample the water in which stick phos-
phorus has been preserved.

Water, Pimento.

Pimento, bruised.....av.oz. 1
Waterfl.oz. 38

Mix and distil off 19 fluidounces.—
Brit. Pharm.

It may also be prepared by triturating
15 drops of oil of pimento with ½ av.
ounce of purified talcum until well
mixed, adding 16 fluidounces of water,
macerating for 6 hours and filtering.

Water, Quassia, Rademacher's.

Quassia bark, cut.....av.oz. 1½
Quassia wood, rasped.....av.oz. 6
Alcoholfl.dr. 19
Water, sufficient.

Mix, macerate for 24 hours, and dis-
til 16 av. ounces of liquid.—H.

Water, Rose.

I.

Stronger rose water.

Distilled water, equal volumes of each.

Mix immediately before use.—U. S. P.

In the Brit. Pharm. the stronger rose
water is directed to be diluted with dou-
ble its volume of distilled water.

The stronger rose water to be used
for this preparation is the imported
triple rose water obtained as a by-prod-
uct in the distillation of oil of rose.

Stronger rose water should be kept in
well-stoppered bottles in a dark place.

Of course, rose water may be pre-
pared from oil of rose, but the product
is not so good, does not have the pleas-
ant, fragrant odor of the water prepared
from a good imported triple water. If
it is prepared from oil of rose, about 15
or 20 drops of the latter may be mixed
in a bottle with one-half gallon of warm
distilled water, the mixture allowed to
stand until cold, and then filtered.

II

Oil of rose.....drops 7
 Distilled water, lukewarm..fl.oz. 60
 Mix, agitate, and filter.—Germ.
 Pharm.

Water, Sedative. (Lotio Ammoniacalis Camphorata—Eau Sedative de Raspail—Aqua Sedativa.)

Ammonia water, 10 p.c....fl.oz. 2
 Spirit of camphor.....fl.dr. 1½
 Sodium chlorid.....gr. 480
 Water to make.....fl.oz. 16

Dissolve the sodium chlorid in about 8 fluidounces of water, add the ammonia water and spirit of camphor, and finally enough water to make 16 fluidounces of product.—N. F.

Shake the liquid when it is to be dispensed

The above is practically the formula of the Codex.

Raspail himself used three strengths of sedative water, which differed from each other on the proportion of ammonia water they contained. They were prepared with strong ammonia water and contained the equivalents respectively of 2, 2¼ and 3¼ fluidounces of 10 p. c. ammonia water.

Water, Spearmint.

Oil of spearmint.....m. 15
 Purified talc.....gr. 115
 Distilled water, to make....fl.oz. 16

Triturate the oil with the talc, add the water gradually with continued trituration, filter, and pass the filtrate repeatedly through the filter until the water comes through clear.—U. S. P.

The preparation of the Brit. Pharm. is made by mixing 30 minims of oil with 96 fluidounces of water and distilling 64 fluidounces.

Water, Tar.

See Infusion of Tar.

Water, Thymol.

The following may be dispensed for this:

Thymolgr. 1
 Distilled water.....fl.oz. 4

Warm the water to about 60 deg. C. and agitate the thymol with it until it is dissolved.

Water, Tobacco, Rademacher's. (Aqua Nicotianæ.)

Tobacco leaves, freshly gatheredav.oz. 16
 Alcoholfl.oz. 3½
 Water, sufficient.

Cut the leaves, add the alcohol and water and then distil 16 av. ounces.—H.

Water, Tolu.

This may be prepared as follows:

Tincture of tolu.....fl.dr. 1
 Magnesium carbonate.....gr. 60
 Waterfl.oz. 16

Triturate the tincture with the magnesium carbonate until well mixed, add the water gradually with stirring, and filter.

Tolu water may also be prepared by boiling tolu balsam with water.

This is used to some extent in lieu of distilled water for making mucilage of acacia.

Wax, Yellow, Filtered.

Yellow wax.....av.oz. 16
 Sodium sulfate, dried, fine powderav.oz. ¾

Melt the wax at the lowest possible temperature, add the sodium sulfate, maintain the wax at the same temperature for 15 minutes, stirring frequently, and filter by hot filtration.

This is an excellent product suitable for ointments and cerates provided the temperature employed in preparation was not too high.—D.

Wines (Vina).

The U. S. P. wines are either solutions in wine, mixtures with the latter, or preparations made by maceration or percolation with wine, the wine being fortified by the addition of alcohol. Two (simple) wines are recognized by the U. S. P., viz., red wine and white wine, the commercial port and sherry wines corresponding fairly to the description given for these. Only the white, or sherry, wine is, however, employed for making the medicinal wines. This white wine, in order to be suitable for pharmaceutical purposes, should contain not less than 7 nor more than 12 per cent by weight of absolute alcohol (corresponding to 8.5 to 15 per cent by volume).

Wine of Aloes.

Purified aloes.....	gr. 420
Cardamon	gr. 70
Ginger	gr. 70
Stronger white wine to make	av.oz. 16

Mix the aloes, cardamom and ginger, and reduce them to a moderately coarse (No. 40) powder. Macerate the powder with 14½ fluidounces of stronger white wine for seven days, with occasional agitation, and filter through paper, adding, through the filter, enough stronger white wine to make the filter liquid weigh 16 av.ounces.—N. F. Appendix and U. S. P. 1880.

Wine of Antimony. (Antimonial Wine—Vinum Stibiatum.)

I.

Tartar emetic.....	gr. 30
Distilled water.....	fl.oz. 1
Alcohol	fl.oz. 2¾
Sherry wine, to make.....	fl.oz. 16

Heat the water to boiling, dissolve the tartar emetic in it, add this solution to the alcohol previously mixed with 11½ fluidounces of wine, allow the mixture to cool, filter it, and add enough wine through the filter to make 16 fluidounces of product.—U. S. P.

The tartar emetic should be pure, not the ordinary commercial powder.

II.

In the Brit. Pharm., slightly more tartar emetic is used than in the U. S. P., viz., 33 grains instead of 30.

III.

Tartar emetic.....	gm. 30
Sherry wine, to make.....	fl.oz. 16

Mix, dissolve and filter.—Germ. Pharm.

Wine, Aromatic.

Lavender flowers	gr. 70
Origanum herb	gr. 70
Peppermint herb	gr. 70
Rosemary leaves	gr. 70
Sage	gr. 70
Wormwood	gr. 70
Stronger white wine, to make	av.oz. 16

Mix the drugs, reduce them to coarse powder, moisten with 5 fluidrams of the wine, pack in a percolator, and perco-

late with the stronger white wine to make 16 av.ounces of percolate.—U. S. P. 1880.

This is the aromatic wine of the Codex.

Wine of Beef. (Beef and Wine—Vinum Carnis.)

Extract of beef.....	gr. 480
Water, hot.....	fl.oz. 2
Simple syrup	fl.oz. 4
Compound spirit of orange..	m. 15
Alcohol	fl.oz. 4
Sherry wine, to make.....	fl.oz. 32

Triturate the extract with hot water, and add with continuous stirring the alcohol. Allow the mixture to stand for 3 days or more, then filter, distil off the alcohol, add the spirit and syrup to the residue and enough wine to make 32 fluidounces, and filter if necessary.

The extract of beef for this preparation is that which is prepared by Liebig's method.—N. F.

Wine of Beef and Iron. (Beef, Wine and Iron.)

I.

Extract of beef.....	gr. 480
Tincture of iron citrochlorid	fl.oz. 1
Compound spirit of orange..	m. 15
Water, hot	fl.oz. 2
Alcohol	fl.oz. 4
Simple syrup	fl.oz. 4
Sherry wine, to make.....	fl.oz. 32

Triturate the extract with the hot water and add, with continuous stirring, the alcohol. Allow the mixture to stand 3 days or more; then filter, distil off the alcohol, add the spirit, tincture and syrup to the residue and enough wine to make 32 fluidounces. Filter if necessary.

Each fluidram represents 2 gr. of extract of beef and 2 minims of tincture of iron citrochlorid.

The extract of beef used should be that prepared by Liebig's process.—N. F.

Other flavoring agents may be used besides the compound spirit of orange, such as tincture of sweet orange peel or another wine may be used such as Angelica or Muscatelle.

In spite of its apparent simplicity, this is a troublesome preparation to keep, as

it invariably deposits a precipitate. To avoid this various expedients have been resorted to such as detannation of the wine, the use of fresh beef or beef peptone for the extract of beef, the use of other iron compounds, etc. The following formulas present examples of differently prepared products.

II.

Extract of beef.....	gr. 512
Iron phosphate, scale.....	gr. 128
Water, hot	fl.oz. 2
Simple syrup	fl.oz. 4
Tincture of sweet orange-peel	fl.oz. 2
Sherry or other suitable wine, to make	fl.oz. 32
Ferric hydrate, sufficient.	

Detannate the mixed tincture and 12 fluidounces of the wine by agitation, with about 4 av.ounces of freshly prepared (moist) ferric hydrate (see Iron Hydrate for method of preparation), allowing to stand for 24 hours, filtering, and passing enough water through the filter to restore the original volume of liquid. Test a small amount of this liquid by adding some tincture or solution of ferric chlorid; if discoloration occurs, the liquid must be treated with more ferric hydrate in the same manner as before.

To the filtrate, add the extract and iron salt previously dissolved in the water, and finally add the syrup.

Instead of the iron phosphate and a portion of the water, $8\frac{1}{2}$ fluidrams of tincture of iron citrochlorid may be used.

III.

Extract of beef.....	gr. 700
Iron phosphate, scale.....	gr. 256
Pimento, powder	gr. 20
Clove, powder	gr. 6
Tincture of sweet orange-peel	fl.oz. 3
Simple syrup	fl.oz. 3
Stronger white wine.....	fl.oz. 22
Water, to make.....	fl.oz. 32

Dissolve the extract in 2 fluidounces of warm water, the iron salt in $\frac{1}{2}$ fluid-ounce of warm water, mix, add the other ingredients, macerate for 4 days, agitating occasionally, and filter.—D. C. Form.

IV.

Extract of beef.....	av.oz. 2
Iron citrate, soluble.....	gr. 480
Water, warm	fl.oz. 2
Simple elixir	fl.oz. 8
Angelica wine, to make....	fl.oz. 32

Dissolve the extract and iron salt in the warm water, add the elixir and wine, and filter.

V.

Beef peptone	gr. 128
Tincture of iron citro-chlorid.....	fl.oz. 1
Water, warm.....	fl.oz. 2
Simple syrup	fl.oz. 2
Simple elixir	fl.oz. 2
Sherry or other suitable wine	fl.oz. 25

Dissolve the peptone in the warm water, add the other ingredients, and filter.

The beef peptone is now commercially available.

VI.

Fresh beef, lean, chopped fine, or cut in a food chopper.....	av.oz. 20
Iron citrate, scale.....	gr. 270
Compound tincture of cardamom	fl.oz. $1\frac{1}{2}$
Tincture of sweet orange-peel	fl.oz. $1\frac{1}{2}$
Alcohol	fl.oz. 3
Simple syrup	fl.oz. 6
Sherry wine	fl.oz. 36
Milk	fl.oz. 1
Water, to make.....	fl.oz. 64

Macerate the beef with 16 fluidounces of cold water for several hours, then reduce the temperature to 40 deg. C. and strain with expression. Add the milk to the wine, mix well, set aside a few hours, then filter. To the filtrate add the beef liquid, the iron salt dissolved in 1 fluid-ounce, the tinctures, alcohol and syrup, and, if necessary to make 64 fluidounces of product, wash the beef residue with sufficient warm water to make this volume. Let the mixture stand a few days, and filter.

**Wine of Beef, Iron and Cinchona.
(Beef, Wine, Iron and Cinchona.)**

Quinine sulfate.....	gr. 30
Cinchonidine sulfate	gr. 15
Citric acid	gr. 11
Wine of beef and iron.....	fl.oz. 32

Reduce the alkaloid sulfates and the acid to fine powder by trituration and

dissolve them in the wine. Filter if necessary.—N. F.

Each fluidram represents 2 gr. of beef extract, 2 m. of tincture of iron citrochlorid, and small quantities of cinchona alkaloids.

Wine of Beef, Iron and Coca. (Beef, Iron, Wine and Coca.)

Extract of beef.....	gr. 256
Tincture of iron citrochlorid.....	f.dr. 4¼
Water, hot	f.oz. 1
Simple syrup	f.oz. 1
Fluid extract of coca.....	f.dr. 10½
Sherry wine, to make.....	f.oz. 16

Triturate the extract of beef with the water until dissolved, add 10 fluidounces of wine, then the tincture, syrup, fluid extract, and the remainder of the wine, and filter.

Each fluidram represents 2 gr. of beef extract, 2 m. of tincture of iron, and 5 gr. of coca.

Wine, Camphorated.

Camphor	gr. 145
Alcohol	f.dr. 3
Mucilage of acacia.....	f.oz. 1
Sherry wine	f.oz. 14½

Dissolve the camphor in the alcohol, and gradually add the mucilage and wine previously mixed, agitating constantly.—Germ. Pharm.

Wine of Cascara Sagrada.

Bitterless fluid extract of cascara sagrada	f.oz. 1
Gelatin	gr. 10
Distilled water	f.dr. 2
Sugar	av.oz. 1
Sherry wine	f.oz. 18

Dissolve the gelatin in the water by the aid of a gentle heat, add the wine, then the fluid extract and sugar, shake well, set aside in a cool place for 8 days, and filter.—D.

The gelatin prevents subsequent turbidity of the preparation.

Wine of Cinchona.

I.

Red cinchona, coarse powder	av.oz. 1¾
Gelatin	gr. 7
Sugar	av.oz. 1½
Tincture of bitter orange peel.....	m. 15
Water, warm	m. 70
Sherry wine	f.oz. 15½

Dissolve the gelatin in the water, add the sherry wine and the cinchona, macerate for 8 days at a temperature of 60 to 70 deg. C., agitating occasionally, express, add the sugar and tincture, agitate till the sugar is dissolved, set aside in a cool place for 14 days, and filter.—Germ. Pharm.

II.

The preparation may be made from the fluid extract as follows:

Fluid extract of red cinchona.....	f.dr. 5½
Glycerin	f.oz. 2½
Stronger white wine, to make	f.oz. 16

Mix, let stand a few days, and filter.

III.

Wine of cinchona prepared according to the preceding formulas precipitates copiously; the following formula is highly recommended as producing a satisfactory product:

Cinchona, red, coarse powder.....	gr. 320
Hydrochloric acid	m. 20
Citric acid.....	gr. 10
Water	f.oz. 2
Sherry wine	f.oz. 7
Malaga wine	f.oz. 7
Simple syrup	f.oz. 1½
Brandy	f.dr. 6
Tincture sweet orange peel.....	m. 40
Alcohol	f.oz. 1

Heat the cinchona with the hydrochloric acid and water in a closed vessel on a water bath for 24 hours, then pack the mass in a percolator, add the alcohol, macerate for 6 days, then percolate slowly with the sherry wine containing the citric acid in solution, and finally percolate with the Malaga wine, syrup, tincture, and brandy mixed.

The product has a pleasant, aromatic, only slightly bitter taste.

Wine of Cinchona, Aromatic.

This is a practical modification of the Eclectic formula:

Red cinchona	av.oz. 1
Coriander	gr. 15
Cinnamon	gr. 30
Sugar	av.oz. 2
Tartaric acid	gr. 15
Stronger white wine.....	sufficient.

Reduce the drugs to moderately coarse

powder, and extract by the usual process of percolation, using the wine as a menstruum. Collect 16 fluidounces of percolate and in this dissolve the sugar and acid.

The stronger white wine may be made from Madeira or Catawba wine if desired.

This is a pleasant, aromatic tonic.

Wine of Cinchona and Cacao.

Fluid extract of yellow cinchonafl.oz. 1
Tincture of cacao.....fl.oz. 1
Simple syrupfl.oz. 2
Angelica winefl.oz. 12
Mix and filter, if necessary.

Wine of Cinchona and Coca.

Fluid extract of coca.....fl.oz. 1
Wine of cinchona and cacao.fl.oz. 15

Wine of Coca.

Fluid extract of coca.....fl.oz. 1
Alcoholfl.oz. 1¼
Sugarav.oz. 1
Port wine, to make.....fl.oz. 16

Dissolve the sugar in 8 fluidounces of the wine, add the fluid extract and alcohol and the remainder of the wine, set the mixture aside for 2 days, then filter through paper in a well-covered funnel.

—U. S. P.

Wine of Coca, Aromatic.

Fluid extract of coca.....fl.oz. 1
Compound elixir of taraxacum.m. 75
Syrup of coffee.....fl.dr. 3
Port winefl.oz. 2½
Aromatic elixirfl.oz. 4½
Sherry wine, to make.....fl.oz. 16

Mix the five first-named ingredients with 7½ fluidounces of sherry wine. Let the mixture stand several days, if convenient, then filter.

Each fluidounce represents about 30 gr. of coca.—N. F.

Wine of Coca With Beef.

A preparation of this kind may be made as follows:

Extract of beef.....gr. 256
Wine of coca.....fl.oz. 16

Triturate together, let stand a few days, and filter.

Wine of Cod-Liver Oil.

A preparation of this kind may be made as follows:

Gaduolgr. 64
Alcoholfl.dr. 4
Simple syrupfl.oz. 2
Fuller's earthav.oz. ½
Port wine, to make.....fl.oz. 16

Mix the gaduol with the alcohol, and add the fuller's earth, rub well together, and then add the syrup and 13 fluidounces of wine, let stand a day or two, shaking occasionally, then filter, passing the remainder of the wine through the filter.

A preparation of the same character, but of a more distinctive taste and appearance, may be compounded as follows:

Gaduolgr. 64
Alcoholfl.dr. 4
Fuller's earthav.oz. ½
Port wine, claret wine, equal parts of each, to make....fl.oz. 16

Proceed as before.

These preparations will be improved by adding a small amount of spirit of orange.

Compounds prepared as above contain 25 per cent. of the active medicinal principles of col-liver oil.

Wine of Colchicum.

The preparation of the Brit. Pharm. of this name is wine of colchicum root. See Wine of Colchicum Root, No. III.

The preparation of the Germ. Pharm. of this name is wine of colchicum seed. See Wine of Colchicum Seed No. III.

Wine of Colchicum Root.

I.

Colchicum root, No. 30 powderav.oz. 6¾
Alcoholfl.oz. 2½
Sherry wine, to makefl.oz. 16

Mix the alcohol with 13 fluidounces of wine, moisten the drug with 1½ fluidounces of menstruum, pack it moderately in a conical glass percolator, and gradually pour upon it, first, the remainder of the menstruum, and afterwards enough wine to make 16 fluidounces of percolate.—N. F. Appendix and U. S. P. 1880.

The N. F. remarks that this formula is given for reference only. If wine of colchicum is prescribed, the much weaker wine of colchicum seed should be dispensed.

II.

Colchicum root, No. 20 powderav.oz. $3\frac{1}{4}$
Sherry winefl.oz. 16

Mix, macerate for 7 days, agitating occasionally, strain with expression, and filter.—Brit. Pharm.

Wine of Colchicum Seed.

I.

Fluid extract of colchicum seedfl.dr. 13
Alcoholfl.oz. $2\frac{1}{2}$
Sherry wine, to make.....fl.oz. 16

Mix, set aside for 2 days, then filter through paper, in a well-covered funnel.—U. S. P.

II.

The Eclectic preparation is made by extracting $2\frac{1}{2}$ av.ounces of drug with enough sherry wine to make 15 fluid-ounces.

III.

Colchicum seed, No. 20 powdergr. 730
Sherry winefl.oz. 16

Mix, macerate for 8 days, agitating occasionally, strain with expression, set aside for several days, and filter.—Germ. Pharm.

Wine of Comfrey, Compound. (Restorative Wine Bitters—Vinum Symphyti Compositum.)

Comfreyav.oz. $\frac{1}{4}$
Solomon's seedav.oz. $\frac{1}{4}$
Heloniasav.oz. $\frac{1}{4}$
Roman chamomilegr. 55
Columbogr. 55
Gentiangr. 55
Cardamom seedgr. 55
Sassafrasgr. 55
Sherry wine, to make.....fl.oz. 16

Reduce the drugs to moderately coarse powder, and extract by percolation with the wine so as to obtain 16 fluidounces of percolate.—Eclectic modified.

This is a tonic for diseases peculiar to females.

Wine of Condurango.

Condurango, No. 20 powder.gr. 730
Sherry winefl.oz. 16

Mix, macerate for 8 days, agitating occasionally, strain with expression, set aside for several days, and filter.—Germ. Pharm.

Wine, Diuretic, Trousseau's.

Squillgr. 48
Digitalisgr. 96
Juniper berriesgr. 480
Potassium acetategr. 144
Sherry winefl.oz. 16

Mix, macerate for 7 days, agitating occasionally, express and filter.—H.

Wine of Elder. (Hydragogue Tincture—Vinum Sambuci.)

Elder bark.....av.oz. 1
Parsley root.....av. oz. 1
Sherry wine, to make.....fl.oz. 16

Extract the mixed and powdered drugs by percolation or maceration.—Eclectic.

Wine of Ergot.

Fluid extract of ergot.....fl.oz. $3\frac{1}{4}$
Alcoholfl.dr. $6\frac{1}{2}$
Sherry wine, to make.....fl.oz. 16

Mix, set aside for 2 days, then filter through paper, in a well-covered funnel.—U. S. P.

Wine of Golden Seal, Compound.. (Wine Bitters.)

Golden sealgr. 20
Tulip tree barkgr. 20
Bitter root (dogbane).....gr. 20
Prickly-ash berriesgr. 10
Sassafras barkgr. 10
Capsicumgr. 10
Sherry wine, to make.....fl.oz. 16

Extract the mixed drugs in coarse powder by percolation or maceration.—Eclectic.

Wine of Hellebore, Compound.

Black helleboregr. 580
Logwoodgr. 580
Helonias rootgr. 580
Sherry wine, to make.....fl.oz. 16

Reduce the drugs to moderately coarse powder and extract by percolation or maceration with the wine so as to obtain 16 fluidounces of product.—Eclectic.

This is a tonic and cathartic, with a direct influence on the female organs.

The dose is 1 or 2 tablespoonfuls every 3 or 4 hours.

Wine of Hypophosphites, Compound.

Calcium hypophosphite.....gr.	128
Potassium hypophosphite....gr.	64
Sodium hypophosphitegr.	64
Ferric hypophosphitegr.	8
Manganese hypophosphite...gr.	8
Quinine hydrochloridgr.	4
Potassium citrategr.	20
Citric acidgr.	8
Strychnine (alkaloid).....gr.	1¼
Fluid extract of coca.....fl.dr.	10½
Alcoholfl.dr.	1½
Glycerinfl.dr.	5
Sugarav.oz.	6
Distilled water.....fl.oz.	4
Stronger white wine, to make.....fl.oz.	16

Mix the fluid extract with the glycerin and add 6½ fluidounces of stronger white wine. Allow to stand 24 hours and filter.

Triturate the hypophosphites of iron and manganese with the potassium citrate, citric acid and 4 fluidounces of water and gently warm the mixture for a few minutes until all is dissolved.

Dissolve the other hypophosphites and the quinine salt in 3½ fluidounces of water, to which add the strychnine previously dissolved in the alcohol.

Add the second solution to the third and filter; dissolve the sugar in this filtrate by percolation, passing enough water through the percolator to make the percolate measure 8 fluidounces. To this add the fluid extract mixture and enough stronger white wine to make 16 fluidounces.

Each fluidram represents 1 gr. of calcium hypophosphite, ½ gr. each of potassium and sodium hypophosphites, 1/16 gr. each, of iron and manganese hypophosphites, 1/32 gr. of quinine hydrochlorid, 1/100 gr. of strychnine and 5 gr. of coca.—Cinc. Acad. Pharm.

Wine of Ipecac.

I.

Fluid extract of ipecac.....fl.oz.	1½
Alcoholfl.oz.	1½
Sherry winefl.oz.	12
Mix, set aside for 2 days, then filter	

through paper in a well-covered funnel.—U. S. P.

II.

Fluid extract of ipecac of the Brit. Pharm.....fl.dr.	6½
Sherry wine, to make.....fl.oz.	16
—Brit. Pharm.	

III.

Ipecac, No. 20 powder.....gr.	730
Sherry winefl.oz.	16
Mix, macerate for 8 days, agitating occasionally, strain with expression, and filter.—Germ. Pharm.	

Wine of Iron. (Vinum Ferri—Chalybeate or Steel Wine.)

I.

Iron and ammonium citrate (so-called "soluble citrate of iron")gr.	290
Tincture of sweet orange-peelfl.oz.	1
Simple syrupfl.oz.	13
Sherry wine, to makefl.oz.	16

Dissolve the iron compound in 11 fluidounces of wine, add the tincture and syrup and enough wine to make 16 fluidounces. Set the mixture aside for 2 days, then filter through paper in a well-covered funnel.—U. S. P.

This preparation was known as "wine of iron citrate" in the U. S. P. 1890. See also Wine of Iron Citrate.

II.

Iron, in wire.....gr.	365
Sherry winefl.oz.	16
Set aside for 30 days in a closed vessel, the iron wire being almost, but not quite, immersed in the sherry, the vessel being frequently agitated, and the stopper occasionally removed, then filter.—Brit. Pharm.	

III.

The acid potassium tartrate present in the wine in No. II. reacts upon the iron to form iron and potassium tartrate. A wine containing a definite amount of this salt may be prepared as follows:

Iron and potassium tartrate..gr.	160
Water, warmfl.oz.	4
Ammonia watersufficient	
Angelica wine, to make....fl.oz.	16
Dissolve the salt in the water, carefully neutralize the acid in the wine with ammonia, mix the two liquids, and filter.	

Wine of Iron, Bitter. (Wine of Iron and Quinine Citrate.)

- I.
- | | |
|----------------------------------------|---------|
| Soluble iron and quinine citrate | gr. 365 |
| Tinct. of sweet orange peel..... | 1 |
| Simple syrup | 5 |
| Sherry wine, to make..... | 16 |

Dissolve the iron and quinine citrate in 8 fluidounces of wine, add the tincture and syrup and the remainder of the wine, set the mixture aside for 2 days, then filter through paper, in a well-covered funnel.—U. S. P.

II. Mitchell's formula:

- | | |
|--------------------------------------------|------------|
| Cinchona, yellow, coarse powder | gr. 192 |
| Gentian, coarse powder..... | gr. 128 |
| Soluble iron citrate..... | gr. 192 |
| Brandy | 1 |
| Alcohol | 1 |
| Oil of orange..... | m. 15 |
| Sugar | av.oz. 2 |
| Sherry wine | fl.oz. 13 |
| Solution of iron tersulfate..... | fl.oz. 2 |
| Distilled water, ammonia water, each | sufficient |

Dissolve the oil in the alcohol, mix this with the wine and brandy, percolate the ground drugs with this liquid, adding through the drug enough water to make the percolate measure 15 fluidounces. Detannate this liquid by means of ferric hydrate prepared by diluting the iron solution with 4 fluidounces of water, adding ammonia water in slight excess, collecting the precipitate, and washing and draining it thoroughly. Mix this precipitate with the percolate, and agitate occasionally until a filtered portion has a light yellow color and does not discolor with tincture or solution of iron chlorid. Filter the total liquid, to the filtrate add the iron citrate dissolved in a small amount of warm water, and then through the filter add enough water to make a total liquid of 16 fluidounces.

Wine of Iron Citrate.

The preparation of the U. S. P. 1890 of this name is now known as wine of iron, which see; the preparation of the Brit. Pharm. of this name is as follows:

- | | |
|-----------------------------------------------|-----------|
| Iron citrate, soluble (ammonio-citrate) | gr. 135 |
| Orange wine of the Brit. Pharm., to make..... | fl.oz. 16 |

Dissolve the iron salt in the wine, agitate occasionally for 3 days, and filter.

Wine of Iron and Potassium Tartrate.

See Wine of Iron.

Wine of Iron, Sweet.

This is a good formula:

- | | |
|----------------------------------|-----------|
| Iron citrate, soluble..... | gr. 128 |
| Distilled water, warm..... | fl.dr. 4 |
| Tinct. of sweet orange peel..... | fl.oz. 1 |
| Simple elixir | fl.oz. 1 |
| Simple syrup | fl.oz. 3 |
| Sherry wine, to make..... | fl.oz. 16 |

Dissolve the iron citrate in the water and add the other ingredients.

Wine, Kola.

I. The following formula may be used:

- | | |
|--------------------------|------------|
| Kola, No. 20 powder..... | av.oz. 1/2 |
| Sherry wine | fl.oz. 16 |

Mix, macerate for 7 days, and filter.

Such a preparation has a disagreeable taste; the following is an improvement, as it has a clear bitter taste:

II.

- | | |
|-----------------------------------|------------|
| Roasted kola, No. 20 powder | av.oz. 1/2 |
| Sherry wine | fl.oz. 16 |

Mix, macerate for 7 days, agitating occasionally, and filter.

This may be sweetened by the addition of some simple syrup or sugar.

III. Formula of Munich Apothecaries' Society:

- | | |
|----------------------------|--------------|
| Fluid extract of kola..... | fl.dr. 6 1/2 |
| Sherry wine, to make..... | fl.oz. 16 |

Wine of Licorice with Opium. (Vinum Liquiritiæ Thebaicum—Rosen's Broest Droppar.

- | | |
|--------------------------------------|-----------|
| Opium, powder | gr. 145 |
| Spanish saffron, coarse powder | gr. 145 |
| Extract of licorice, powder..... | gr. 145 |
| Malaga wine | fl.oz. 16 |

Macerate the drugs for 5 days with the wine, and filter.—Swed. Pharm.

The product contains 2 per cent. of each of the drugs.

Wine of Opium.

Opium, granulated	gr. 730
Saigon cinnamon, No. 60 powder	gr. 72
Clove, No. 30 powder.....	gr. 72
Alcohol, sherry wine, each, to make	fl.oz. 16

Mix the alcohol and wine in the proportion of 3 volumes of the former to 17 of the latter. Macerate the drugs in a stoppered container, in a moderately warm place, with 12 fluidounces of this menstruum, during 7 days, agitating occasionally; then filter through absorbent cotton, in a well-covered funnel, returning the first portions until the filtrate passes perfectly clear, and finally pass enough menstruum through the residue to make the liquid measure 16 fluidounces.—U. S. P.

The granulated opium should be of the strength specified by the U. S. P., that is it should contain 12 to 12½ per cent. of crystallized opium.

**Wine of Orange. (Orange Wine—
Vinum Aurantii.)**

Oil of bitter orange peel.....	m. 8
(about drops	m. 12)
Alcohol	m. 75
Purified talcum.....	gr. 120
Sherry wine, to make.....	fl.oz. 16

Triturate the talcum, first with the alcohol, in which the oil has previously been dissolved, and afterwards with 12 fluidounces of wine, gradually added. Filter the mixture through a wetted filter, returning the first portions of the filtrate until it runs through clear, and lastly, pass enough wine through the filter to make 16 fluidounces.—N. F.

This preparation is used only as a pleasant vehicle.

In the Brit. Pharm., it is described as a wine made by the fermentation of a saccharine solution to which fresh bitter-orange peel has been added.

**Wine of Orange, Compound. (Elixir
Aurantiorum Compositum—Com-
pound Elixir of Orange—Vinum
Aurantii Compositum.)**

Bitter orange peel.....	av.oz. 3¼
Wormwood	gr. 480
Buckbean	gr. 480

Cascarilla	gr. 480
Cinnamon, cassia.....	gr. 120
Gentian	gr. 320
Potassium carbonate	gr. 75
Sherry wine, to make.....	fl.oz. 16

Reduce the first six drugs to a moderately coarse (No. 40) powder, mix with the potassium carbonate, moisten the mixture with sherry wine, and macerate during 24 hours. Then pack it in a percolator, and percolate with sherry wine, in the usual manner, until 16 fluidounces of product are obtained.

This wine was formerly official in the Germ. Pharm., which directed to macerate the orange peel, cinnamon and potassium carbonate, with the sherry wine, and then to add the other drugs in form of extracts. The proportions above given produce a product practically identical with this. See Elixir of Orange, Compound.—N. F.

Wine, Orange, Detannated.

Orange wine, Brit. Pharm....	gall. 1
Gelatin, cut small.....	gr. 90
Macerate for 14 days, and decant. —Brit Form.	

Wine of Pancreatin.

Such preparation may be made as follows:

Pancreatin, pure	gr. 160
Simple elixir	fl.oz. 5
Sherry wine	fl.oz. 11
Mix all, macerate for 24 hours, and filter.	

Wine of Pepsin. (Pepsin Wine.)

I.

Glycerite of pepsin.....	fl.oz. 3
Alcohol	fl.oz. 1½
Sherry wine	fl.oz. 10½
Mix the alcohol and wine, add the glycerite, and mix thoroughly.—N. F.	
Each fluidram represents 1 gr. of U. S. P. pepsin.	

This preparation should be prepared fresh when needed.

II.

Pepsin (1:100)	gr. 180
Glycerin	fl.dr. 2
Hydrochloric acid	m. 15
Water	fl.dr. 3
Simple syrup	fl.oz. 1¼
Tinct. of bitter orange peel.....	m. 15
Sherry wine, to make.....	fl.oz. 16
—Germ. Pharm.	

III.

Pepsin	gr. 256
Hydrochloric acid	m. 96
Glycerin	f.dr. 6½
Sherry wine, to make.....	f.oz. 16

Add the acid to 14½ fluidounces of wine, triturate the pepsin with the glycerin, gradually add the mixed wine and acid with constant stirring, set aside for 7 days, filter, and add through the filter enough wine to make 16 fluidounces.—Brit. Form.

Wine, Quinine.

Quinine hydrochlorid	gr. 16
Orange wine	f.oz. 16
—Brit. Pharm.	

Mix, dissolve by agitation, and filter.

Wine of Rhubarb.

I.

Rhubarb, No. 30 powder....	gr. 700
Calamus, No. 30 powder....	gr. 70
Stronger white wine, to make	f.oz. 16

Moisten the mixed drugs with 6 fluidrams of stronger white wine, pack the mixture in a conical glass percolator, and gradually pour enough stronger white wine upon it to make the filtered liquid weigh 16 av.ounces.—N. F. Appendix and U. S. P. 1880.

II.

Rhubarb, coarse powder....	av.oz. 1¼
Canella, coarse powder.....	gr. 50
Sherry wine, to make.....	f.oz. 16

Mix, macerate for 7 days, agitating occasionally, strain with expression, filter, and add through the filter enough sherry wine to make the filtrate measure 16 fluidounces.—Brit. Pharm. 1885.

Wine of Tar. (Vinum Picis—Tar or Jew's Beer.)

I.

Pine tar	gr. 720
Water	f.oz. 4
Pumice, moderately fine powder	av.oz. 2¼
Stronger white wine, to make	f.oz. 16

Upon the tar contained in a suitable vessel pour 4 fluidounces of cold water, and triturate the mixture thoroughly; then pour off the water and throw it away. Mix the remaining tar thoroughly with the powdered pumice, and add

16 fluidounces of stronger white wine. Stir frequently during 4 hours, then transfer the mixture to a wetted filter, and, after the liquid has passed, pour on enough stronger white wine to make the filtrate measure 16 fluidounces.—N. F.

II.

Pine tar	gr. 720
Magnesium carbonate	gr. 180
Sherry wine, to make.....	f.oz. 16

Mix the tar thoroughly with the magnesium carbonate, add the wine, digest the mixture for an hour, filter, and add enough water through the filter to make the filtrate measure 16 fluidounces.—D. C. Form.

III. Moore's formula:

Pine tar	av.oz. 2¼
Glycerin	f.oz. 1
Sherry wine	f.oz. 1
Honey	f.oz. 1
Acetic acid	f.dr. 1
Water, boiling	f.oz. 12

Mix all the above in a suitable vessel, agitate thoroughly for several minutes, then tightly stopper the vessel and heat on a water bath for an hour or two to a temperature of about 65 or 70 deg. C., shaking frequently. Then set aside in a warm place for a few days, again shaking frequently, strain through muslin and finally filter the strained liquid.

IV. This preparation may also be made from the oil as follows:

Oil of tar.....	f.dr. 2½
Magnesium carbonate	gr. 175
Sugar	av.oz. 1¼
Alcohol	f.oz. 2½
Simple syrup	f.oz. 1¼
Sherry wine, to make.....	f.oz. 16

Triturate the oil with the magnesium carbonate and sugar to a smooth mixture, then having mixed the alcohol, wine, and water together, rub the tar mixture with this liquid added gradually, filter, and finally add the syrup.

Wine of Wafer Ash. (Wine of Ptelea.)

A preparation of this kind may be made as follows:

Water ash, powder.....	av.oz. 2½
Sherry wine, to make.....	f.oz. 16
Extract the drug by percolation.	

Wine, White, Stronger.

White (sherry) wine.....fl.oz. 7
 Alcoholfl.oz. 1

When tested for alcohol, stronger white wine should contain not less than 20 nor more than 25 per cent. of absolute alcohol by weight, and hence the white wine should contain from 10 to 12 p. c. of absolute alcohol. If a weaker wine be used more alcohol is necessary to make the stronger wine; if it be stronger, less is required.—N. F. Appendix and U. S. P. 1880.

This is used as a menstruum for making some of the wines.

Wine of White Ash. (Vinum Fraxini Americanæ.)

White ash bark.....av.oz. $8\frac{1}{2}$
 Stronger white wine, to
 makefl.oz. 16

Macerate the drug in 12 fluidounces of the wine for 3 days, in a covered vessel; then transfer to a percolator prepared for percolation and allow the liquid to drain. When completely drained pack the residue firmly, and gradually pour on the menstruum until the total percolate measures 16 fluidounces. Finally, filter the product, if necessary, and keep it in well-stoppered bottles, which should be completely filled, and stored in a cool place.

Each fluidram represents 30 grains of drug, which is the inner bark of the trunk or root of *Fraxinus Americana* Linné.—N. F.

Wine of Wild Cherry.

Wild cherry, No. 40 powderav.oz. $4\frac{1}{4}$
 Waterfl.oz. 3
 Alcoholfl.oz. $1\frac{1}{2}$
 Sugarav.oz. $2\frac{3}{4}$
 Purified talcgr. 120
 Angelica wine, to make...fl.oz. 16

Moisten the wild cherry with the water and transfer it to a percolator prepared for percolation. Allow the percolator to remain well covered for 3 or 4 hours, then pack the moistened drug moderately firm, and pour on enough of a mixture of $1\frac{1}{2}$ fluidounces of alcohol and 10 fluidounces of the wine to leave

a stratum above the drug. When the liquid begins to drop, close the lower orifice, and continue the maceration for 12 hours. Then allow percolation to proceed slowly, gradually adding the remainder of the mixture of alcohol and wine, followed by enough wine to make $14\frac{1}{2}$ fluidounces of percolate. In this dissolve the sugar, add the talc, mix thoroughly, then filter, returning the first portions of filtrate to the filter until it runs through clear, and finally add enough angelica wine to make the filtrate measure 16 fluidounces.—N. F.

Each fluidram represents 15 grains of wild cherry.

Wine of Wild Cherry, Ferrated.

Tinct. of iron citrochlorid..fl.dr. 10
 Wine of wild cherry, to
 makefl.oz. 16

Mix, allow to stand for several days (or a week) if convenient, and filter, if necessary.

Each fluidram contains 5 m. of tincture of iron citrochlorid and $13\frac{3}{4}$ gr. of wild cherry.—N. F.

Wood Wool.

Wood wool is used to some extent in surgical practice in the plain and antiseptic forms. It is a light woolly mass which is capable of absorbing a large quantity of liquid and has the further advantage of cheapness.

See next article on sublimated wood wool.

Wood Wool, Sublimated.

3/10 p. c.
 Mercuric chloridgr. 21
 Glyceringr. 350
 Alcoholfl.oz. $9\frac{1}{4}$
 Distilled waterfl.oz. 23
 Wood woolav.oz. 16

$\frac{1}{2}$ p. c.
 Mercuric chloridgr. 35
 Glyceringr. 350
 Alcoholfl.oz. $9\frac{1}{4}$
 Distilled waterfl.oz. 23
 Wood woolav.oz. 16

Dissolve the mercuric chlorid in the mixed liquids, saturate the wood wool uniformly with all the liquid, and dry at a temperature of 25 to 30 deg. C.—D.

Wool Fat. (Adeps Lanæ.)

Wool fat for pharmaceutical and cosmetic purposes is the highly purified fat of sheep's wool. The commercial brands vary considerably in quality, but an almost odorless, yellowish white product is now obtainable.

It appears in the market in the anhydrous and hydrous forms, the former containing little or no water, the latter containing 30 per cent. of water. Either of these may be prepared from the other. The anhydrous variety may be prepared from the hydrous by heating the latter on a water bath to expel the water. The hydrous kind is to be used in making

preparations, compounding prescriptions, etc., unless the hydrous is specified. Both hydrous and anhydrous kinds are recognized by the U. S., Brit. and Germ. Pharms. In each work the anhydrous kind is known simply as "wool fat," while the other is called "hydrous wool fat." In the Brit. Pharm. it is directed to make the hydrous kind by mixing 3 fluidounces of distilled water with 7 avoirdupois ounces of the anhydrous; the Germ. Pharm. directs mixing 1 part by weight of distilled with 3 parts of anhydrous wool fat; the U. S. P. does not make mention of such procedure.



PART II.

DOMESTIC AND VETERINARY REMEDIES.

DRUGGISTS' DOMESTIC PREPARATIONS.

While this Part is not intended in any sense as a treatise upon the manufacture of proprietary medicines, it is proposed to impart to the pharmacist such information as he requires in preparing remedies for ordinary ailments, for popular use and sale. These remedies may be offered by the pharmacist for sale under his own name or that of a pseudonym, if the latter be preferred.

Strictly toilet preparations, such as freckle, tan and sunburn removers, hair growers, etc., are mentioned in another Part under "Perfumes and Toilet Articles."

Ague Cures.

Remedies for the relief and cure of fever, ague, and chills, or, more properly, malaria, are not of such frequent use as they were some years ago; however, there is still a demand in some sections, and the pharmacist must be prepared to supply the want. Most of these remedies are made to contain cinchona or one or more of its alkaloids, sometimes also arsenic and frequently some iron or a cathartic.

These preparations may assume the form of liquid or pills, or even some other form, but the two mentioned are the most common. They may be entitled Peruvian Ague Cure, Ague Tonic, Ague Tonic Syrup, Ague Tonic Cure, Chill Cure, Chill Tonic, Ague Pills, Anti-Chill Pills, Chologogue, Ague Remedy, Ague Bitters, Ague Specific, Fever and Ague Tonic, Febrifuge, Ague Specific, etc.

Liquids.

The dose of these mentioned here is one or two teaspoonfuls 3 times a day.

I. Formula of the Illinois Pharmaceutical Association:

Tincture of eucalyptus (1 in 10).....	f.oz. 4'
Tincture of serpentaria.....	f.oz. 8
Tincture of capsicum.....	f.dr. 10
Tincture of myrrh.....	f.dr. 10
Tincture of nux vomica.....	f.dr. 4
Quinine sulfate	dr. 2
Elixir of licorice, to make..	f.oz. 32

II.

Quinidine sulfate.....	av.oz. 2
Solution of arsenous acid...	f.dr. 4
Fluid extract of senna.....	f.oz. 8
Syrup of licorice, to make..	f.oz. 64

Owing to the absence from the above of the bitter taste of quinine, cinchonidine or cinchona bark, it may be termed Tasteless Chill Cure, Tasteless Ague Tonic, or Tasteless Chill Tonic.

The fluid extract of senna may be omitted.

Powders.

III.

Cinchona, powder.....	av.oz. 4
Cream of tartar.....	av.oz. 4
Clove, powder.....	av.oz. 1/2

The dose is one teaspoonful every 3 hours.

This preparation has been termed Dutch Ague Remedy.

Pills.

IV.

Make pills, each containing:

Chinoidine	gr. 1
Iron ferrocyanid.....	gr. 1
Oil of black pepper.....	drop 1
Arsenous acid	gr. 1/20

V.

Chinoidin	gr. 150
Podophyllin	gr. 5
Leptandrin	gr. 10
Capsicum powder.....	gr. 20

Ague Cures (Cont'd).

Powder the chinoidin, mix with the other ingredients, warm gently to make a mass and divide into 100 pills.

For chills and fever, take 1 to 4 pills, according as they are intended for children or adults, the dose being repeated every 3 or 4 hours between the chills.

These pills are also recommended for neuralgia when the dose for adults is 1 or 2 pills every 2 hours until relieved. These pills are also useful, used as a liver and laxative pill, as may be noted from the ingredients.

Asthma Remedies.

The number of titles employed to designate asthma remedies is comparatively small; the following are appropriate: Asthma Remedy, Asthma Elixir, Ant-asthmatic Powder, Antasthmatic Remedy, Asthma Cure, Asthma Mixture, etc.

Asthma remedies are of about three kinds, one for internal administration, one for inhalation, and one to be ignited, the vapor to be inhaled. Favorite ingredients of the first kind are the alkali iodids, ammonium salts, grindelia, wild cherry, lobelia, belladonna, Hoffman's anodyne, etc.

The liquid preparations for inhalation contain amyl nitrite and oil of mustard. Asthma remedies to be used by ignition are usually composed of stramonium, potassium nitrate, belladonna, etc.

Internal Remedies.**I.**

Ammonium iodid	gr. 120
Tincture of lobelia.....	fl.dr. 2
Tincture of belladonna.....	fl.dr. 2
Fluid extract of grindelia	
robusta	fl.dr. 4
Fluid extract of licorice...	fl.dr. 4
Syrup of tolu, to make....	fl.oz. 4

The dose is a teaspoonful three times a day. Extra doses are to be used during a paroxysm.

II.

Potassium iodid	gr. 160
Fluid extract of grindelia..	fl.dr. 4
Fluid extract of belladonna..	m. 30
Tincture of gelsemium....	fl.dr. 1

Water	fl.oz. 1
Simple elixir, to make....	fl.oz. 4

The dose is one and a half teaspoonfuls every 2 or 3 hours. After about three doses are taken the difficulty of breathing will have disappeared.

III.

Potassium iodid	gr. 160
Tincture of belladonna.....	m. 160
Solution of potassium ar-	
senite	m. 100
Water, to make.....	fl.oz. 4

One teaspoonful is to be given in water between meals.

IV. The following, known as Hare's Antiasthmatic Elixir, is also highly recommended:

Sodium iodid	gr. 256
Sodium bromid	gr. 256
Tincture of lobelia.....	m. 256
Fl. ex. euphorbia pilulifera..	fl.dr. 6½
Spirit of nitroglycerin.....	m. 64
Simple elixir, to make....	fl.oz. 16

The dose is one or two teaspoonfuls 3 times a day, well diluted in water.

Inhalants.

V. The following two formulas are for preparations intended as inhalants to relieve the paroxysms of asthma:

Oil of mustard, essential....	m. 15
Oil of Scotch pine.....	fl.dr. 2
Oil of eucalyptus.....	fl.dr. 2
Oil of peppermint.....	fl.dr. 2
Tincture of iodine.....	fl.dr. 2
Ether	fl.dr. 4
Alcohol, to make.....	fl.oz. 4

Moisten cotton or sponge with the mixture and inhale the vapor.

VI.

Amyl nitrite	fl.dr. 2
Oil of mustard, essential...	drops 10
Ether	fl.dr. 4
Alcohol	fl.oz. 3½

Put a few drops of the liquid upon some cotton or sponge and inhale from the latter.

VII.

Stramonium leaves	av.oz. 1
Belladonna leaves	av.oz. 1
Potassium nitrate	gr. 72
Opium	gr. 30

Mix the drugs in powder. This is to be burned and the vapors inhaled.

VIII.

Stramonium leaves	av.oz. 2
Cannabis indica	av.oz. 1
• Lobelia leaves	av.oz. 1
Eucalyptus	ax.oz. 1
Tea leaves	av.oz. 1
Anise	gr. 60
Potassium nitrate	av.oz. 1¼

Reduce all to powder and pass through a No. 30 sieve; then dry thoroughly. If the potassium nitrate be fixed with 3 ounces of water, and the vegetable powder be moistened with the solution, and then thoroughly dried, it burns better; but if all the ingredients are well dried, and the niter is thoroughly mixed, this is not necessary.

Papers.

IX. The Paper of Potassium Nitrate, U. S. P., 1890, may be used. It is prepared by immersing strips of white un-sized paper in a solution of potassium nitrate in 4 parts of water, and then drying them.

In using they are to be ignited and the vapor inhaled.

Cigarettes.

X. Cigarettes may be prepared from a mixture of equal parts of stramonium, lobelia and belladonna leaves. These may be cut to a very fine condition, then rolled in suitable paper, and sealing the ends to prevent the drug from falling out by turning up the ends of the paper.

XI. Another form of cigarette useful for asthma is the following:

Sodium arsenate	gr. 4
Extract of belladonna	gr. 10
Extract of stramonium	gr. 10

Mix and dissolve in a small quantity of water or diluted alcohol, with this solution saturate a piece of blotting or other bibulous paper large enough to absorb all of the liquid, then dry the paper and cut it into 32 parts. Each of these rolled into cigarette paper makes one cigarette.

One of these may be smoked 3 or 4 times a day.

Barber's Itch, Remedies for.

I.

Resorcin	gr. 90
Glycerin	fl.dr. 4
Water or rose water	fl.oz. 1
Lac sulphur	av.oz. ½
Bay rum, to make	fl.oz. 4

Apply twice daily by means of a soft sponge.

II. Shave off the hairs or cut them very short; then apply, once or twice a week, an ointment composed of

Prepared chalk	av.oz. 1
Coal tar	gr. 45 to 180
Glycerin	fl.dr. 4
Simple cerate	av.oz. 5

III.

Menthol	gr. 60
Yellow oxid of mercury	gr. 5
Benzoic acid	gr. 20
Camphor, powder	gr. 20
Boracic acid	gr. 20
Petrolatum, to make	gr. 480

Use freely three or four times a day.

Wash the eruption with a 10 per cent solution of carbolic acid before using.

IV. The remedies mentioned under Ringworm Application may also be used for barber's itch.

Bitters.

The preparations known as "bitters" were very much more common some years ago than they are now. To a large extent they are obsolete except in some prohibition districts where they are merely disguised tipples. These bitters were recommended for a great variety of disorders, including stomach affections such as indigestion and dyspepsia, also malaria, liver and kidney complaints, and constipation; they were also recommended as tonics in enfeebled conditions and alteratives in diseased states of the blood. They therefore contained such ingredients as columbo, gentian, cinchona, calamus, aloes, senna, mandrake, culver's root, bitter orange peel, juniper berries, buchu, hops, iron compounds, chamomile, wahoo, cardamom, dandelion, burdock, cinnamon, prickly ash, etc.

The directions for taking these prepa-

Bitters (Cont'd).

rations is from a tablespoonful to a wineglassful three times a day.

Suitable names for these preparations are Wahoo Bitters, Jaundice Bitters, Stomach Bitters, Hop Bitters, Plantation Bitters, American Plant Bitters, Prickly Ash Bitters, Tonic Bitters, Iron Tonic Bitters, Purgative Bitters, Liver Bitters, German Bitters, Spring Bitters, Burdock Bitters, etc. If the preparation is strongly recommended as an alternative or blood purifier it may be called Alterative Bitters or Blood Bitters.

I. Formula of the Illinois Pharmaceutical Association:

Gentian	av.oz. 7
Calamus	av.oz. 4
Bitter orange peel.....	av.oz. 2
Tincture of iron citro- chlorid	fl.oz. 3
Syrupy glucose	fl.oz. 14
Alcohol, water, to make.....	fl.oz. 64

Mix the three drugs, reduce to coarse powder, and extract by percolation with a mixture of 1 volume of alcohol and 2 of water to obtain 47 fluid ounces of percolate; to this add the glucose and tincture.

II.

Aloes	av.oz. 6
Sassafras	av.oz. 8
Gentian	av.oz. 4
Hops	av.oz. 2
Chamomile	av.oz. 2
Acetic acid	av.oz. 1
Alcohol	fl.oz. 32
Water, to make.....	gal. 1

Mix the acid and alcohol with 2 quarts of water, also mix the drugs, reduce to coarse powder, pack and macerate in a percolator, pass the previous mixture through it, and then enough hot water to make 1 gallon.

III.

Fluid extract of gentian....	fl.oz. 1
Fl. ext. yellow cinchona....	fl.oz. 1
Quinine sulfate	gr. 120
Iron citrate, soluble.....	av.oz. 2
Spirit of orange.....	fl.oz. 1
Simple syrup	fl.oz. 32
Water, hot	fl.oz. 8
Sherry wine, to make.....	gal. 1

Dissolve the iron salt in the water, add the other ingredients, and filter.

IV.

Fluid extract of hops.....	fl.oz. 2
Fluid ext. of red cinchona....	fl.oz. 1
Fluid ext. of sarsaparilla....	fl.dr. 6
Fluid ext. of hydrastis.....	fl.dr. 6
Fluid ext. of mandrake.....	fl.dr. 4
Oil of wintergreen.....	m. 45
Oil of sassafras.....	m. 25
Oil of peppermint.....	m. 15
Oil of lemon.....	m. 15
Sugar	av.oz. 12
Alcohol	fl.oz. 32
Water, to make.....	gal. 1½

Mix all, dissolve the sugar by agitation, let stand a few days, and filter.

The drugs may be used instead of the fluid extracts, in which case they are to be extracted with a mixture of 2 volumes of alcohol and 9 of water.

V.

Cascara sagrada.....	av.oz. 4
Gentian	av.oz. 4
Dandelion	av.oz. 2
German chamomile.....	av.oz. 2
Stillingia	av.oz. 2
Bitter orange peel.....	av.oz. 1
Clove	gr. 180
Spirit of orange.....	fl.oz. 1
Sugar	av.oz. 16
Alcohol, water.....	each, sufficient

Mix the seven drugs and reduce to moderately coarse powder, extract by percolation with a mixture of 1 part of alcohol to 3 of water so as to obtain 120 fluidounces of product. To this add the spirit of orange and the sugar; dissolve the latter by agitation.

VI.

Hops	av.oz. 4
Dandelion	av.oz. 4
Gentian	av.oz. 4
German chamomile	av.oz. 4
Stillingia	av.oz. 4
Sugar	av.oz. 32
Water, alcohol.....	each, sufficient

Mix the drugs, reduce to coarse powder and extract by percolation so as to obtain 110 fluidounces of percolate, using a menstruum composed of 1 volume of alcohol and 3 of water; in this percolate dissolve the sugar by agitation or percolation.

VII.

Gentian	av.oz. 4
Cinchona	av.oz. 2
Roman chamomile	av.oz. 1
Quassia	av.oz. $\frac{1}{2}$
Bitter orange peel.....	av.oz. $\frac{1}{2}$
Diluted alcohol	gal. 1

Mix the drugs, reduce to coarse powder, mix with the diluted alcohol, macerate for 7 days, agitating occasionally, then express and filter.

"Black Eyes" and Bruises, Applications for.

Ammonium chlorid	av.oz. $\frac{1}{2}$
Alcohol	fl.oz. $\frac{1}{4}$
Water	fl.oz. 5

Dilute acetic acid may be substituted for one-half the water and the alcohol may be replaced by 1 fluidounce of tincture of arnica.

This preparation is a valuable application for bruises or contusions; it is therefore of value in the treatment of ecchymotic conditions, such as "black eye." If applied at once and continuously for a time after the blow has been received, no discoloration will appear.

The following is also useful for bruises and "black eyes":

Potassium nitrate	gr. 15
Ammonium chlorid	gr. 30
Aromatic vinegar	fl.dr. 4
Water, to make.....	fl.oz. 8

Blood Purifiers.

These preparations may be put up under the names of Sarsaparilla, Sarsaparilla Syrup, Compound Extract of Sarsaparilla, Compound Sarsaparilla with Burdock and Iodid of Potassium, Compound Syrup of Red Clover Blossoms, Blood Purifying Tea, Alterative Mixture, Blood Cleanser, or whatever other title may seem appropriate or desirable.

The ingredients of these mixtures are sarsaparilla, stillingia, burdock, yellow dock, red clover, any one or more of these combined, sometimes with potassium iodid, often with some laxative. Blood purifying mixtures are in fact mainly cathartics. Sometimes the cathartic principle present is a saline like sodium sulfate or rochelle salt, some-

times it is senna, mandrake, buckthorn, cascara sagrada, etc.

Formerly all blood purifiers were prepared in the liquid form: latterly some are prepared in the form of "teas," or species. Examples of both kinds are given among the recipes that follow. The "teas" may be termed Blood Purifying Tea, Sarsaparilla Tea, etc.

Liquids.

I. Formula of the Illinois Pharmaceutical Association:

Potassium iodid.....	av.oz. 2 gr. 80
Water	fl.oz. 8
Fluid extract of burdock root	fl.oz. 8
Comp. fl. ext. of sarsaparilla.....	fl.oz. 32
Syrupy glucose, to make.....	fl.oz. 64

Dissolve the iodid in the water and add the other ingredients. The dose is 1 to 4 teaspoonfuls, according to age, 3 times a day.

II.

Buckthorn bark	av.oz. 20
Rochelle salt	av.oz. 8
Potassium bicarbonate.....	av.oz. $\frac{1}{2}$
Sugar	av.oz. 24
Alcohol	fl.oz. 24
Spirit of lemon.....	fl.dr. 6
Tincture of ginger.....	fl.dr. 6
Oil of anise.....	drops 15
Water	sufficient

With sufficient water make 5½ pints of decoction from the buckthorn bark, which may be deprived of bitterness by the addition of calcined magnesia (see Bitterless Extract of Cascara Sagrada, Part I) and dissolve in it the rochelle salt, potassium bicarbonate and sugar. After allowing to stand for some time, clarify by straining through flannel. Then mix the remaining ingredients and incorporate with the decoction.

The dose is from 1 to 2 tablespoonfuls morning and evening, some time after meals.

III.

Cream of tartar.....	av.oz. 2
Potassium bicarbonate.....	gr. 600
Fluid extract of mandrake.....	fl.dr. 4
Comp. fl. ext. of sarsaparilla	fl.oz. 6
Comp. tincture of cardamom	fl.oz. 1

Blood Purifiers (Cont'd).

Glycerinfl.oz. 8
 Water, to make.....fl.oz. 64

Dissolve the two potassium compounds in 8 fluidounces of water by the aid of a gentle heat, add the remaining ingredients, set aside for about 12 hours, and filter. The cream of tartar and potassium bicarbonate together form neutral potassium tartar.

IV. This preparation may be called Sarsaparilla with Celery.

Sarsaparillaav.oz. 3
 Cascara sagradaav.oz. 3
 Dandelionav.oz. 3
 Sassafrasav.oz. 3
 Celery seedav.oz. 2
 Burdock rootav.oz. 2
 Red cloverav.oz. 2
 Gentianav.oz. 2
 Glycerinav.oz. 14
 Alcohol, water, to make....gal. 1

Extract the drugs by maceration or percolation to make 114 fluidounces, using a mixture of 1 volume of alcohol and 5 of water as the menstruum, then add the glycerin.

V.

Sarsaparillaav.oz. 16
 Sassafras barkav.oz. 4
 Burdock rootav.oz. 3
 Dandelionav.oz. 3
 Prickly ash bark.....av.oz. 3
 Roman chamomileav.oz. 3
 Potassium iodidav.oz. 1
 Sodium salicylateav.oz. 1/2
 Glycerinfl.oz. 12
 Alcoholfl.oz. 24
 Water, to make.....gal. 1

Grind all the drugs to No. 20 powder. Mix the glycerin and alcohol with 2 quarts of water. Macerate 24 hours and percolate. When the liquid has ceased to drop, pour in hot water until a gallon altogether has been obtained. Add the potassium iodid and sodium salicylate and dissolve. If not sufficiently dark to suit, add 1 fluidounce of caramel.

Teas.**VI.**

Sennaav.oz. 20
 Sugarav.oz. 20
 Fennelav.oz. 10
 Juniper berries.....av.oz. 6
 Celery seedav.oz. 4

Couch grassav.oz. 4
 Sassafrasav.oz. 4
 Carawayav.oz. 2
 Rochelle saltav.oz. 8

All should be in coarse powder and should be well mixed. The mixture is cathartic, alterative and diuretic.

VII.

Sennaav.oz. 32
 Corianderav.oz. 8
 Mannaav.oz. 16
 Cream of tartar.....av.oz. 1 1/2
 Make into a species.

Boils and Carbuncles, Treatment for.

A boil is an acute inflammation of the deeper layers of the skin and adjacent connective tissues and is due to staphylococcus infection by way of the hair follicles. A carbuncle is similar, but is larger and more serious. The method of treatment is very much the same. The old-time method of treatment for boils was to "bring them to a head" by means of repeated applications of hot linseed poultice. However, any hot applications continuously applied will serve the same purpose; cloths wrung with hot water or, better, hot boric acid solution, will serve well. Instead of any of these, the so-called mother or Hamburg plaster (see formula in Part I) may be used. If the boil is not too far advanced it may possibly be aborted. Various methods of treatment are outlined below.

I—A.

Salicylic aciddr. 2
 Soap plasterav.oz. 2
 Lead plasterav.oz. 1

B.

Ichthyolav.oz. 1/2
 Resin plasterav.oz. 1/2
 Lead plasterav.oz. 1

Melt the plasters and incorporate the other ingredients.

These are intended to be applied once or twice daily on a cloth.

II. This is another method of treatment:

Tincture of chlorid of iron..fl.oz. 1
 Solution of potassium
 arsenitefl.dr. 1 1/2
 Water, to make.....fl.oz. 4
 Take a teaspoonful after each meal.

Use, locally, camphorated carbolic acid and poultice of linseed meal when there is much inflammation. Also advise small doses of epsom salts to prevent constipation.

III. The following formulas are for what is called the modern treatment of boils and carbuncles:

A.

Chloroform	fl.oz. 1
Oil of clove.....	fl.dr. 1½ to 5
Creosote	m. 15 to 30
Liniment of camphor.....	fl.oz. 2

B.

Mercury salicylate.....	gr. 2 to 5
Salicylic acid.....	gr. 15 to 30
Alcohol	av.oz. 1
Water, to make.....	fl.oz. 4

Dissolve the solids in the alcohol and add the water.

These are to be used externally only. The affected part is covered with compresses saturated with either of the above liquids. At the same time one of the following preparations is to be injected into the boil or carbuncle.

C.

Carbolic acid	gr. 1 to 3
Sodium salicylate	gr. 15
Sodium borate	gr. 15
Glycerin	m. 30
Chloroform water.....	fl.dr. 2
Mix and dissolve.	

D.

Iodoform	gr. 5 to 8
Salol	gr. 8 to 15
Carbolic acid	gr. 2
Ether	fl.dr. ½ to 1
Alcohol	fl.dr. 1½ or 1
Mix and dissolve.	

This treatment is said to give excellent results and to do away with a more radical surgical operation even in cases of carbuncle.

Bunion Cures.

The remedies recommended for the relief and cure of corns are usually also recommended for the removal of bunions. While these remedies often do afford relief, the two maladies are almost as distinct as they could possibly be. Corns are inflammations of the skin,

whereas bunions are inflammations of the synovial membrane, which connects the great toe with the foot proper. Nothing less than surgical operation will absolutely and permanently cure bunions.

Relief to bunions is often afforded as stated by the application of corn cures, assisted by frequent bathing in hot water. Frequently anointing with petrolatum, the application of tincture of iodine or of iodine ointment, or the wearing of a rubber protector will prove beneficial.

A warm flaxseed-meal poultice at night often eases a great deal.

Shoemaker recommends the following paint:

Carbolic acid.....	fl.dr. 2
Tincture of iodine.....	fl.dr. 2
Glycerin	fl.dr. 2

To be applied with a camel's hair pencil every day. Copper oleate plaster is also advised by the same authority.

Painting on of tincture iodine may help by promoting absorption of the exudates; 50 per cent ointment of ichthyol with hydrous wool-fat is useful. In case the inflammation becomes too severe, apply Lotion of Lead and Opium (see formula in Part I).

Burns and Scalds, Applications for.

I. In burns and scalds it is of first importance for the relief of pain to protect the part from the air. A great many remedies have been used for this purpose. Besides being protective, they should also be antiseptic, or at least aseptic. One of the most popular applications is caron oil, made of equal parts of lime water and linseed oil. The addition of carbolic acid, salol or thymol is suggested as in the following:

Thymol	gr. 75
Raw linseed oil.....	fl.oz. 8
Lime water	fl.oz. 8

Dissolve the thymol in the oil, add the water, and shake well.

Olive oil or other bland fixed oil may be substituted for the linseed oil, but the latter has the best reputation for this purpose.

This mixture is to be applied freely,

Bunion Cures (Cont'd).

with or without cloths or by means of a cotton pad, whichever may be most convenient. After a few days, apply zinc oxid ointment or else use the following:

Bismuth subnitrate	av.oz. 1
Boric acid	av.oz. 1/2
Olive oil	fl.oz. 2
Wool-fat, hydrous	av.oz. 6

II. A saturated solution of picric acid in water applied continuously on cloths has proved of great efficacy in relieving the pain caused by burns and in promoting healing. A proprietary preparation now on the market highly advocated for burns is said to be nothing more than an aqueous solution of picric acid. The solution may be applied on thick cloths or a pad of cotton.

III. The following preparation, devised by the late Charles Rice, is said to be popular in New York:

Gelatin	av.oz. 15
Glycerin	fl.oz. 2
Carbolic acid	fl.dr. 2
Water	fl.oz. 32

Soak the gelatin in the cold water until it is soft, then heat on a water bath until it is dissolved. Add the glycerin and continue heating until a firm, glossy skin begins to form on the surface of the mixture during the intervals between stirring. Now add the carbolic acid and mix well.

The mixture may be kept ready prepared, and is best preserved in well-closed glass or porcelain jars. When it is wanted for use it is heated on a water bath until just melted and applied with a soft, flat brush over the burned part, where it will form a strong, flexible skin.

This preparation is said to be very effective, being superior to carron oil and similar preparations ordinarily used.

IV. Unna's burn salve is composed of:

Wool-fat, anhydrous	part 1
Benzoinated lard	parts 2
Lime water	parts 3

V. Some of the preparations under

the heading Ointments or Salves, may also be utilized. Liniment of Turpentine (see formula in Part I) is also used for burns.

Canker Sore-Mouth.

Canker, also called thrush and spruce, is a disease of infancy, and is due to improper feeding and poor digestion. It appears as white spots, of greater or less size, in the mouth and throat. These spots are due to micro-organisms. Canker is more common in infants fed on artificial food than in those fed on breast-milk, and in such cases may be accompanied by vomiting, diarrhea, feverishness, etc. It will be surmised that the local treatment should be supplemented by treatment directed towards the removal of the cause. Castor oil to cleanse the intestinal tract and antifermentative preparations to prevent fermentation of food are in order, also change of diet.

For local application the most popular remedy is honey and borax, which is smeared on with a soft cloth or with the fingers or by means of a camel-hair pencil, 3 or 4 times a day. A solution of borax in glycerin may also be used as in the following:

Borax	av.oz. 1
Glycerin	fl.oz. 2
Distilled water, to make	fl.oz. 8

Infusion of gold thread is also a popular and effective application, though not so pleasant to the child as either of the preceding.

If the disease still persists, the spots should be touched occasionally with burnt alum or a piece of copper sulfate or the mouth washed with a weak solution of silver nitrate or zinc sulfate, as follows:

Zinc sulfate	gr. 5
Rose water	fl.oz. 1

Cancer, Local Treatment of.

Arsenic is the chief ingredient of most of the local applications recommended for the cure of cancer. Zinc chlorid in solution is also used, as is also a com-

bination of this with arsenic. One of the best known preparations is Marsden's Cancer Paste. This consists of arsenous acid, two parts, and mucilage of acacia, one part, made into a paste. Its application causes considerable pain and is sometimes replaced by Bougard's paste, which is less painful, forms a more dry and friable slough, can be safely applied to a larger surface and can be kept ready for instant use. With both pastes the surfaces must be denuded, if not already ulcerated, by caustic potash, to render the action prompt and effective in the shortest possible time. Bougard's formula is as follows:

Wheat flour	av.oz.	1
Starch	av.oz.	1
Arsenic	gr.	7
Mercuric sulfid	gr.	36
Ammonium chlorid	gr.	36
Mercuric chlorid	gr.	4
Solution of zinc chlorid....	av.oz.	4

The first six substances are separately reduced to fine powder. They are then mixed in a porcelain or glass mortar, and the solution of zinc chlorid slowly poured in, while the contents are kept rapidly rotated with the pestle so that no lump will be formed. A thick layer of this is spread on cotton and left in position 24 hours, and then managed in every way as is Marsden's paste. Few cases require a second application. The ulcer may be dressed with peru balsam or aristol ointment of varying strengths, according to the stimulation required, and all exuberant granulations are to be kept in check by the usual methods.

Another local preparation for cancer is Esmarch's Painless Cancer Powder, which is said to contain arsenous acid 10 grains, morphine hydrochlorid 10 grains, calomel 80 grains, acacia 480 grains.

Applications of this character should never be made under the direction of incompetent persons. Arsenic as a caustic is not only in its action difficult to regulate, but dangerous symptoms of poisoning have resulted from the very ready way in which it is absorbed by the skin.

The same remarks apply with equal force to mixtures containing zinc chlorid, tartar emetic and other escharotics. It is the physician's duty to recommend how they shall be used.

Catarrh and Cold-in-the-Head, Remedies for.

The acute form of inflammation of the mucous membrane of the nose is known as coryza or acute rhinitis, the chronic form is called chronic rhinitis or chronic nasal catarrh. In popular parlance the latter is called catarrh, the former cold-in-the-head. Acute rhinitis may lead to bronchitis or to catarrh. Both of these disorders are very common in various parts of the United States. Catarrh, when it has acquired a firm hold on the individual, requires practically constant treatment.

The remedies for catarrh are multi-form. Some are snuffs, others are to be used by inhalation, some by spraying, others by insufflation or by injection with syringe or a douche. Others again are in the form of an ointment, which is to be applied to the interior of the nostrils, then to be snuffed up; and finally others again are to be taken internally, the latter containing tonics combined with some agent which diffuses itself through the system and thus attacks the local manifestations of the disease.

The snuffs contain various agents, the most conspicuous being cocaine, the indiscriminate or careless use of which cannot be too severely condemned. Purchasers of such snuffs should invariably be warned that the cocaine habit is, of all forms, probably the most horrible, and that great danger attends its use in catarrh snuffs. It should never be recommended in cases of chronic catarrh where its use would be liable to prove continuous. The sale of cocaine snuffs is prohibited by law in many States.

The catarrh remedies used by inhalation contain either menthol or iodine combined with carbolic acid. Those used by

Catarrh Remedies (Cont'd).

spraying (with nasal atomizers) contain liquid petrolatum, having in solution menthol, thymol and various antiseptic volatile oils. The catarrh ointments contain ingredients similar to those of the preceding. They are usually made with thymol or menthol with some oil, together with boric acid or bismuth salt and petrolatum. Alkaline and antiseptic washes or sprays are also used.

Besides the ordinary cold in the head, there is also the similar disorder influenza or la grippe. This is a disease of microbic origin, but in its milder forms it seems to the patient nothing more than a cold in the head and is treated similarly. In its severer forms it is so depressing and prostrating that the patient is compelled to go to bed and must have suitable attention from a physician. The preparations for cold-in-the-head are generally in the form of tablets or capsules, sometimes cachets. Usually they are called "cold cures," "anti-grip cures," "coryza tablets," etc. The use of a nose wash like Dobell's or Seiler's Solution in conjunction with a "cold cure" gives a great deal of relief and comfort.

Good titles for catarrh remedies are Catarrh Remedy, Catarrh Cure, Catarrh Snuff, Catarrh Jelly, Cream Balm, Catarrh Balm, Catarrhine, Menthol Snuff, Mentholin, etc.

Snuffs.

Besides being used for catarrh, it is said that if these preparations are used in the early stages of colds and influenza it will "break them up."

I.

Mentholgr. 5
 Sugarav.oz. 1
 Mix and reduce to very fine powder.
 Use several times daily or as frequently as desired.

II.

Boric acid, powder.....av.oz. 1
 Sugar, powderav.oz. 4
 Mentholgr. 30
 Mix and use like the preceding.

III.

Mentholgr. 5
 Sodium bicarbonategr. 10
 Magnesium carbonategr. 15
 Cocaine hydrochlorid.....gr. 20
 Milk sugarav.oz. 1

This is a specimen of a snuff containing cocaine, but its use is not advised. It is beneficial when used in moderation for a short period of time, but its continued use will result in the dreaded cocaine habit.

The above mentioned all contain and may be sold as "menthol snuff" or "mentholin."

Some snuffs are intended to produce sneezing. A well-known proprietary article of this kind is said to be merely powdered bayberry bark. Other sneeze producing mixtures are the following:

IV. A specimen of a bismuth powder is the Anticatarrrhal Powder of the N. F. (see formula in Part I).

V. Other catarrh snuffs are mentioned in Volume I under Snuffs.

Oil Sprays.

These mixtures are intended for spraying into the nose by means of a nasal atomizer. They consist usually of combinations of menthol, thymol, antiseptic volatile oils, etc., dissolved in liquid petrolatum (paraffin oil). The latter should be of a high grade of purity, such as is now easily obtainable in the market. The menthol, thymol or other solid should be perfectly dissolved as otherwise it will clog the atomizer.

VI.

Oil of eucalyptus.....drops 80
 Carbolic acidgr. 8
 Liquid petrolatum.....fl.oz. 4

To insure perfect solution, use the crystal carbolic acid, not the liquefied.

This is useful in all stages of nasal catarrh, including catarrh of grip. It is to be used by spraying several times daily.

VII.

Eucalyptolm. 15
 Terebenem. 15
 Mentholgr. 4

Liquid petrolatum.....fl.oz. 4
Use like the preceding.

VIII.

Chloretongr. 15
Camphorgr. 40
Mentholgr. 40
Oil of cinnamon.....drops 12
Liquid petrolatum, to make.fl.oz. 4

This is known as McClintock's Chlor-
etone Inhalant. It is to be used like the
preceding.

Aqueous Sprays.

These are usually of an alkaline char-
acter, sometimes with an antiseptic vola-
tile oil or with menthol, dissolved in
water with or without alcohol or with
glycerin; or the spray may contain iodine.
They are to be used in a nasal atomizer.

IX. Examples of this class of sprays
are Dobell's or Seiler's Solution (see
formula in Part I), or Sajou's formula
may be used, which is as follows:

Sodium bicarbonate.....gr. 32
Sodium borategr. 32
Fl. ext. pinus canadensis...fl.dr. 1
Glycerinfl.oz. 1
Water, to make.....fl.oz. 4

This is generally diluted with from 2
to 4 parts of water, and is to be used 4
to 6 times daily.

X. Here is another example:

Mentholgr. 4
Oil of eucalyptus.....drops 16
Oil of wintergreen.....drops 16
Sodium bicarbonategr. 60
Sodium borategr. 60
Glycerinfl.oz. 1½
Water, to make.....fl.oz. 4
Mix, dissolve and filter.

One teaspoonful is to be mixed with a
fluidounce of water before use.

XI. This is an example of aqueous
sprays containing iodine:

Iodinegr. 12
Potassium iodide.....gr. 30
Glycerinfl.oz. 2
Waterfl.oz. 2
Use this without dilution.

Ointments.

Preparations in ointment form for use
in nasal catarrh are quite popular. They
have the same medicinal ingredients as
the oil sprays which are made into a

soft ointment with white petrolatum.
They may be dispensed in tin boxes or
in collapsible tubes.

In using these ointments, introduce a
small amount into the nostrils and sniff
it up as far as possible. These are ap-
plied several times daily. Customary
names for these preparations are "ca-
tarrh jelly," "catarrh cream," "cream
balm" and "catarrh balm."

XII.

Oil of eucalyptus.....fl.dr. 2
White petrolatumav.oz. 4

XIII.

Thymolgr. 20
Eucalyptolgr. 40
Mentholgr. 40
Bor acidgr. 80
White petrolatumav.oz. 4

Melt the petrolatum at a gentle heat
and incorporate the other ingredients.

Douches.

Various combinations in aqueous form
are used either by insufflation (snuffing
into the nose from the palm of the
hand) or preferably by means of a
douche. The latter may be the old-style
glass or tin vessel hung on the wall with
a rubber tube attached or the more mod-
ern all-glass affair of the shape of a
wide tube closed at one end, the other
end bent and terminating in a stubbed tip
with a perforation through which the li-
quid flows into the nostrils. In using the
former a large amount of liquid is al-
lowed to flow through the nostrils, hence
greater dilution of the medicating sub-
stance is required and, on account of its
volume, the liquid must be used luke-
warm. The resultant cleansing of the
mucous membrane is as beneficial as the
contact of the medicating substances.

The more modern style of glass
douche described above has the advan-
tage of being small and readily carried
about, and it may be used at any time or
place, only a small volume of liquid be-
ing required. When used, the requisite
amount of medicating solution (usually
one or two teaspoonfuls) is put into the
douche, and the latter filled about three-

Catarrh Remedies (Cont'd).

fourths with water (about one ounce), which is preferably, though not necessarily, lukewarm; the open end of the douche is then applied to one of the nostrils, the head is tipped back when the liquid runs through the nasal cavity; after a minute or two the head to be thrown forward when the excess of liquid will run back into the douche.

The liquids used as douches are any of the preparations mentioned under Aqueous Sprays, or Lister's or Seiler's Antiseptic Solution, Dobell's Solution or Alkaline Antiseptic Solution (see formulas in Part I), or Sajou's Solution, or the following:

XIV.

Boric acid.....	gr. 60
Borax	gr. 60
Sodium chlorid.....	gr. 30
Lister's antiseptic solution	fl.oz. 2
Water	fl.oz. 6

Powders.

Preparations in powder form for the treatment of catarrh are nearly obsolete. They were designed to be made into an infusion (extracted) by the patient with water, and the liquid used in a douche. They are composed of such ingredients as golden seal, sodium chlorid, sodium bicarbonate, potassium chlorate, carbolic acid, etc. The following is an example:

XV.

Sodium chlorid.....	gr. 240
Potassium chlorate.....	gr. 100
Ammonium iodid.....	gr. 4
Carbolic acid.....	drops 20
Camphor, powder.....	gr. 16
Golden seal, powder.....	gr. 40
Mix well.	

This is to be treated with water to make an infusion, which latter is then to be used by insufflation or in a douche.

Tablets.

Tablets for use in nasal catarrh are used to some extent. They are made to contain similar ingredients to the alkaline aqueous sprays or to Seiler's

Antiseptic Solution (the so-called Seiler's Tablets), the sodium bicarbonate, sodium borate, volatile oils, menthol, thymol, eucalyptol, carbolic acid, and other medicating ingredients being mixed and formed into compressed tablets. Manufacturing pharmaceutical houses list various combinations of this kind in their catalogues. The following is also an excellent combination:

XVI.

Sodium benzoate.....	gr. 1
Guaiacol	m 1 / 10
Hydrastine sulfate or hydrochlorid	gr. 1 / 100
Oil of sassafras, to flavor.	

Sugar of milk powder to make a 5-gr. tablet.

Dissolve one in about one-half fluid-ounce of water and use in a nasal douche.

XVII. The following is the composition of the tablet known as Murray McFarlane's Plasma Nasal Tablet:

Sodium chlorid.....	gr. 5 1/2
Sodium sulfate.....	gr. 1 1/2
Sodium phosphate.....	gr. 1/4
Potassium chlorid.....	gr. 2/5
Potassium sulfate.....	gr. 1/4
Potassium phosphate.....	gr. 1/3
Menthol	gr. 1/15

This formula is based upon the composition of the blood. One tablet dissolved in 2 fluidounces of distilled water has approximately the same composition (except the menthol) and specific gravity as blood serum and hence it is entirely unirritating to the mucous membrane and is perfectly adapted for use as a douche or a spray. The menthol is used for its soothing effect.

Inhalants.

XVIII. Menthol is an excellent agent for treatment of catarrh by inhalation. It is commonly put up in vessels more or less resembling tubes, which may be opened at both ends to permit free circulation of air through the tube when in use, and which may be closed tightly when not in use.

XIX.

Camphor	dr. 2
Menthol	dr. 1
Carbolic acid, crystal.....	dr. 1
Ether	fl.oz. $\frac{1}{2}$
Alcohol	fl.oz. 2

Rub the camphor, menthol and carbolic acid together until liquefied, then add the alcohol and ether.

This solution is to be dropped upon absorbent cotton contained in a wide-mouth bottle. The vapor is to be inhaled frequently.

Internal Treatment.

Remedies for the internal treatment of catarrh are intended to contain such ingredients as will diffuse themselves through the system and thus in this indirect way are supposed to attack the disease. The following two formulas are preparations of this kind. However, the internal treatment should always be supplemented by the use of a douche or spray.

XX.

Potassium iodid.....	dr. 3
Syrup of iron iodid.....	fl.oz. 1
Comp. syrup of sarsaparilla	fl.oz. 1
Water, to make.....	fl.oz. 4

A teaspoonful is to be taken 3 times a day.

XXI.

Potassium iodid.....	gr. 60
Compound tincture of cardamon	fl.oz. 4
Compound tincture of gentian	fl.oz. 12

The dose is a tablespoonful 3 times a day.

Grip and Cold Remedies.

The number of preparations offered for the cure of "cold-in-the-head" and la grippe, and the number of formulas to make such preparations, are now legion. They always contain various antipyretic agents, sometimes also caffeine, camphor, opium, ipecac, dover's powder, aloin, podophyllin, etc. The mixtures are commonly put up in the form of tablets or capsules, but may also be dispensed in cachets or as pills.

XXII. At the onset, a severe cold may usually be aborted by giving a purgative and inducing free perspiration. A large dose of castor oil is a suitable purge for children, while a bottle of solution of magnesium citrate acts nicely in adults.

To produce free perspiration the patient should be given a hot foot-bath and well dosed with hot lemonade or ginger tea. He should then be put into a warm bed and well covered with woolen blankets.

If the patient is a child the chest should be thoroughly rubbed with hot camphorated oil and enclosed in a warm woolen jacket or covered with layers of heated flannel. Adults require something more stimulating as

Oil of turpentine.....	fl.oz. 1
Camphorated oil.....	fl.oz. 2

A big mustard or linseed meal poultice applied to the chest is still more effective.

These measures often suffice, but are made more certain in their results by suitable internal remedies. In children who are feverish and restless a simple fever mixture is best, as the following:

Tincture of aconite.....	drops 2
Potassium citrate.....	gr. 60
Spirit of nitrous ether.....	fl.oz. 2
Syrup of ipecac.....	fl.oz. 2
Syrup of orange, to make...	fl.oz. 2

Give one teaspoonful every hour for four doses to child two years old, then every two hours for several doses or until better. Children of other ages in the same proportion.

To abort a cold in an adult, quinine and dover's powder are probably the most popular remedies. Either of these may be used in connection with the preliminary measures already described in a single 5-grain dose at bedtime. They may often be combined with benefit, as in the following:

Extract of belladonna.....	gr. $\frac{1}{8}$
Camphor	gr. 1
Quinine sulfate.....	gr. 1
Dover's powder.....	gr. 2

Grip and Cold Remedies (Cont'd).

Make into a capsule, one of which is to be taken every 3 hours.

Other combinations are mentioned in the succeeding formulas.

In conjunction with a preparation of this kind, it is advisable to use a cleansing wash or spray for the nostrils, such as Dobell's, Seiler's or Lister's or Alkaline Antiseptic Solution.

XXIII.

Podophyllingr. 12
Dover's powder.....gr. 120
Acetanilidgr. 120
Extract of cascara.....gr. 240
Licorice root, powder.....sufficient

Make into 120 capsules or tablets.

The dose is one every 2 or 3 hours.

XXIV.

Quinine sulfate.....gr. 1/2
Ammonium chlorid.....gr. 1/2
Camphorgr. 1/2
Opiumgr. 1/10
Extract aconite root.....gr. 1/10
Extract belladonna leaf....gr. 1/20

Make into one capsule or tablet.

The dose is one every hour or two until relieved, then one every 3 hours.

This is useful in the early stages of a bad cold, it serving to check the secretion from the nose.

Cathartics.

The class of remedial substances most commonly in demand partake of the form of cathartics; also called purgatives, laxatives and aperients. In offering a preparation of this kind for sale, it is customary, as well as advisable, to recommend it for chronic constipation or as a liver invigorator, a blood purifier, a remedy against biliousness or headache, an anti-dyspeptic, etc.

This class of pharmaceutical remedies may take the form of an elixir, syrup, tablet, lozenge, effervescent salt, pill, confection, powder, species, or solution.

Elixir or Syrup.

These preparations may be known by such titles as Laxative Elixir, Laxative Syrup, Cathartic Elixir, Elixir Cathartic Compound, Cathartic Syrup, etc.; if containing figs, they may be called Fig

Syrup, Fig Laxative or Fig Laxative Syrup.

I. Compound Cathartic Elixir, Compound Elixir of Cascara Sagrada, Syrup of Senna, or Aromatic Syrup of Senna may be sold and dispensed as a cathartic preparation if desired. See formulas in Part I under Elixirs and Syrups.

II.

Senna leaves.....av.oz. 8
Buckthorn bark.....av.oz. 6
Licorice root.....av.oz. 4
Aniseav.oz. 1
Fennelav.oz. 1
Carawayav.oz. 1/2
Gingerav.oz. 1/2
Oil of wintergreen.....drops 10
Oil of sassafras.....drops 10
Rochelle salt.....av.oz. 4
Sugarav.oz. 16
Alcohol, water, each.....sufficient

Reduce the drugs to moderately fine powder and extract by percolation with a mixture of 1 volume of alcohol and 3 of water to obtain 52 fluidounces of opercolate. To this add the salt, sugar and oils, dissolve the solids with occasional agitation, and strain.

The dose is a tablespoonful 2 or 3 times daily.

III.

Senna leaves.....av.oz. 10
Jalapav.oz. 3
Rhubarbav.oz. 2 1/2
Buckthorn bark.....av.oz. 1 1/4
Cinnamonav.oz. 1/2
Nutmeggr. 60
Oil of peppermint.....fl.dr. 1
Sugarav.oz. 32
Alcohol, water, each.....sufficient

Mix the drugs, reduce them to moderately fine powder, and extract by percolation with a mixture of 1 volume of alcohol and 3 volumes of water to obtain 44 fluidounces of percolate. In this dissolve the oil and sugar by agitation and then strain.

The dose is a tablespoonful 2 or 3 times a day.

IV.

Fluid extract of rhubarb...fl.oz. 1
Fluid extract of senna.....fl.oz. 1 1/2
Fluid extract of buck-thornfl.oz. 2

Oil of peppermint.....drops 10
 Solution of potassa.....m. 30
 Saccharingr. 10
 Glycerite of licorice.....fl.dr. 4
 Simple elixir, to make.....fl.oz. 16
 Mix, let stand for 24 hours, and filter
 if necessary.

V.

Fluid ext. of mandrake....fl.dr. 4
 Fluid ext. of dandelion...fl.oz. 2
 Aromatic fl. ext. cascara...fl.oz. 4
 Syrup of licorice.....fl.oz. 4
 Simple syrup, to make....fl.oz. 16
 The adult dose is a tablespoonful once

or twice daily.

VI.

Aromatic fl. ext. of cas-
 carafl.oz. 2
 Fluid extract of rhubarb...fl.oz. 1
 Fluid extract of senna.....fl.oz. 1
 Oil of fennel.....drops 5
 Oil of caraway.....drops 5
 Simple syrup, to make....fl.oz. 16
 Mix the fluid extracts, then add the
 oils and the syrup.

VII. Klie's formula:

Gingergr. 120
 Cinnamongr. 120
 Coriandergr. 120
 Carawaygr. 120
 Fennelgr. 120
 Sweet orange peel.....gr. 360
 Mandrakegr. 480
 Anisegr. 480
 Senna, Alexandria.....av.oz. 13¼
 Tartaric acid.....gr. 480
 Alcohol, water, simple syrup,
 eachsufficient

All the solid ingredients, except the
 acid, are mixed and ground for per-
 colation and are then extracted with
 a mixture of 1 volume of alcohol and
 3 of water by the usual process for
 fluid extracts so as to obtain 16 fluid-
 ounces of fluid extract. To this add
 the tartaric acid, mix well, let stand
 for 7 days, agitating frequently, then
 filter and mix the filtrate with 3 pints
 of simple syrup.

This preparation is an especially suit-
 able laxative for infants and small chil-
 dren. The tartaric acid present is no
 objection; it imparts a pleasant, acidu-
 lous taste.

The dose is one teaspoonful for a
 child one year old.

Oil.

VIII. A so-called "tasteless" castor
 oil may be made as follows:

Castor oil.....fl.oz. 16
 Oil of wintergreen.....m. 20
 Oil of cinnamon.....m. 5
 Saccharingr. 5
 Alcoholfl.oz. 1

Dissolve the oils of wintergreen and
 cinnamon and saccharin in the alco-
 hol and add to the castor oil.

This preparation may be kept bot-
 tled and sold especially as a laxative
 for children. It is an excellent method
 of administering castor oil. This prepa-
 ration is better than an emulsion as
 castor oil is less purgative in the emul-
 sified form.

Lozenges or Tablets.

IX. Wash some dried prunes (a
 pound, for instance), place them in
 a saucepan over a dull fire or on a
 sand-bath, with just sufficient water to
 nearly cover them; when they have
 boiled long enough to become quite
 soft, and the greater part of the water
 has been evaporated, allow them to
 cool, and rub them in a large mortar
 so as to crush the fruit, but not the
 kernels. Transfer them to a coarse
 straining cloth and squeeze the pulp
 through it. This should be about the
 consistence of honey. If not, it can
 be made so by evaporating it over a
 water bath. Now make a mixture of:

Senna, powder.....av.oz. 4
 Sugar, powder.....av.oz. 4
 Jalap, powder.....av.oz. ½
 Gum arabic, powder.....av.oz. ¾
 Aromatic powder.....av.oz. ¾

Add sufficient quantity of the prune
 paste to make a mass and divide into
 lozenges of convenient size. These may
 be sprinkled with powdered sugar or
 else coated with melted chocolate, then
 sprinkled with sugar. Tamarind pulp
 may be used instead of the prune pulp,
 which would probably be an advantage;
 and the aromatic powder may be omitted
 if desired.

Cathartics (Cont'd).**X.**

Ext. of senna, powder.....av.oz. 2
 Ext. of licorice, powder...av.oz. 2
 Sugar, powder.....av.oz. 2
 Oil of anise.....fl.dr. 2½
 Oil of wintergreen.....fl.dr. 2½

Mix well, and make into a mass with water which is to be divided into 80 lozenges which are to be dried before use.

The dose is one or two lozenges at night.

Pills and Tablets.

Formulas for cathartic pills might be given by the score. Every pharmaceutical manufacturer lists a great variety of cathartic pills and tablets, some of which are coated with gelatin, chocolate, white sugar, pink sugar, or possibly lavender-colored sugar. The formulas for compound cathartic pills, compound laxative pills, vegetable cathartic pills, and others are given in Part I. Other formulas are given below.

Suitable names to use for these pills and tablets when put up for sale are "liver pills (or tablets)," "cathartic pills (or tablets)," "laxative pills," "antibilious pills," "vegetable liver pills," "improved liver pills," "improved cathartic pills," etc. If the pills are small they may be known as "liver pellets," "little giant liver pills," "little liver granules," "little cathartic pills," "cathartic granules," or some similar title. The dose is generally from one to three at bedtime. One acts as an aperient, two as a laxative, and three as a purgative and chologogue.

XI

Aloingr. 10
 Podophyllingr. 10
 Capsicumgr. 10
 Extract of nux vomica.....gr. 20
 Make into 100 pills.

XII.

Comp. ext. of colocynth....gr. 100
 Podophyllingr. 50
 Leptandringr. 50
 Extract of jalap.....gr. 50
 Extract of henbane.....gr. 25

Extract of gentian.....gr. 20
 Make into 100 pills.

XIII. The following is the combination known as Cook's Pills:

Socotrine aloes.....gr. 100
 Rhubarbgr. 100
 Calomelgr. 50
 Soap, powder.....gr. 50
 Make into 100 pills.

Species (Teas).

These are mixtures of cathartic drugs such as senna leaves and buckthorn bark with licorice root, coriander, anise, fennel, etc., which make the mixture palatable and act as a corrective to the griping action of senna. Manna is sometimes added; it adds to the palatability and effectiveness of the mixture. Rochelle salt and cream of tartar are also used with the view of increasing the effectiveness of the mixture and also to modify the griping action of the senna. Other substances added are dandelion, couch grass, elder flowers, juniper berries, sassafras bark, etc.

The ingredients of these "teas" are to be used in a cut or coarsely powdered condition. Senna is used in a cut condition; so are licorice root, couch grass, buckthorn bark, etc.; seeds like fennel, anise, coriander, etc., are to be bruised by contusion in a mortar.

Names used for these mixtures are "laxative tea," "cathartic tea," "herb tea," "German herb tea," and "blood-purifying tea."

XIV. Laxative Species is an excellent preparation. See formula in Part I.

XV.

Senna leaves, cut.....av.oz. 8
 Couch grass, cut.....av.oz. 4
 Buckthorn bark, cut.....av.oz. 4
 Fennel, bruised.....av.oz. ½

Directions.—A heaping teaspoonful of species in a half cupful of boiling water, let stand for short time and then strain, this to be taken at bedtime.

XVI.

Senna leaves, cut.....av.oz. 10
 Sugarav.oz. 10
 Fennel, bruised.....av.oz. 5
 Rochelle salt.....av.oz. 4

Juniper berries, bruised...	av.oz. 3
Celery seed.....	av.oz. 2
Couch grass, cut.....	av.oz. 2
Sassafras bark, cut.....	av.oz. 2
Caraway, bruised.....	av.oz. 1

This mixture is cathartic, alterative and diuretic.

Powders.

Well-known cathartic powders are compound licorice powder and compound jalap powder. See formulas in Part I under Powders. Or use the following:

XVII.

Jalap, powder.....	av.oz. 2
Bitartrate of potassium...	av.oz. 2
Sugar, powder.....	av.oz. 12
Oil of orange.....	fl.dr. 2

The dose is one or two teaspoonfuls.

Salts.

Salts of various kinds, or mixtures of saline substances, are quite popular laxatives, especially when they are in the effervescent form.

Names used for these preparations are Grape Salt, Fruit Salt, Fruit Laxative, Fruit Saline, Effervescent Saline, Saline Laxative, Laxative Salt, Aperient Salt, etc.

These mixtures may be converted, if desired, into the granular form by any of the processes described in Part I under Salts, Effervescent.

Among the effervescent salts of cathartic character mentioned in Part I are Effervescent Magnesium Citrate, Effervescent Magnesium Sulfate, Effervescent Sodium Phosphate, Effervescent Sodium Citrotartrate, Effervescent Sodium Sulfate, and Effervescent Carlsbad Salt. The Artificial Carlsbad Salt may also be used. Other saline mixtures are the following.

XVIII. This may be sold in powder or granular form, the latter being produced by any of the processes described under Salts, Effervescent, in Part I.

Magnesium sulfate,	
dried	av.oz. 2
Tartaric acid.....	av.oz. 5

Sodium bicarbonate.....	av.oz. 4
Potassium bitartrate.....	av.oz. 4
Sugar, powder.....	av.oz. 4

XIX.

Potassium bitartrate.....	av.oz. 10
Sodium bicarbonate.....	av.oz. 6
Rochelle salt.....	av.oz. 4
Tartaric acid.....	av.oz. 1
Oil of lemon.....	m. 40
Oil of orange.....	m. 20

This may be dispensed in powder or granular form as described under Salts, Effervescent.

Waters.

XX. The following makes an excellent artificial bitter water for aperient purposes:

Magnesium sulfate.....	av.oz. 10
Sodium sulfate.....	av.oz. 8
Sodium chlorid.....	av.oz. $\frac{3}{4}$
Potassium sulfate.....	gr. 24
Sodium bicarbonate.....	gr. 144
Diluted sulfuric acid.....	m. 75
Water, to make.....	gal. 1

Dissolve the solids in the water, filter, and then add the acid. When made in this way the liquid will contain a small amount of carbonic acid gas which makes it somewhat less unpalatable.

The dose is a wineglassful at night on retiring or in the morning before breakfast or both night and morning.

Chilblains and Frost-Bites, Remedies for

Frost-bites are common in cold weather, and especially when it is damp, and attack the portions of the body not well supplied by the circulation, such as the ears, nose, fingers and toes.

The acute form of inflammation directly following severe exposure is commonly known as frost bite and may be so severe as to result in gangrene of the parts; the sub-acute form which persists and appears upon chilling of the surface is called a chilblain. The toes and feet are the portions of the body most commonly attacked by chilblains. The symptoms are intense itching after exposure to cold, the part becoming swollen and dark red; in the severer cases, blisters and sometimes ulcers form.

Cathartics (Cont'd).

Those individuals who are subject to chilblains should be especially careful of their feet and of the hosiery and shoes they wear. The feet should not be exposed to sudden changes of temperature. The hosiery should be woolen, not too thick; it should be thoroughly dry when put on, and changed as soon as damp either from perspiration or from moisture leaking through the shoes.

The same pair should not be worn two days in succession without washing or at least without thorough drying. On no account is the hosiery to be allowed to dry on the feet and the practice of putting the feet before the fire is to be condemned. The shoes should not be too light, especially around the ankles.

Remedies for chilblains should be both internal and external. Persons subject to chilblains are frequently poorly nourished and malt extract with cod liver oil, iron iodid, hypophosphites and other tonics should be used.

The proper treatment of frost-bites consists in applying snow or cold water with friction. Under no circumstances should the patient "thaw out" before a fire. Warm drinks may be administered and if the sensation of cold is severe a mild stimulant may be given such as half a teaspoonful of aromatic spirit of ammonia or a little whisky or brandy.

For the immediate relief of the itching chilblains, the best application is warm water. A great variety of local remedies have been recommended for chilblains. The following prescriptions are all highly recommended by their authors:

I.

Liniment of belladonna.....fl.dr. 2
 Liniment of aconite.....fl.dr. 1
 Carbolic acid.....m. 6
 Flexible collodion.....fl.dr. 5

This is to be applied with a camel's hair pencil every night.

II.

Castor oil;
 Oil of turpentine;
 Flexible collodion, equal volumes of each.

Paint on 2 or 3 times daily. This is said to be effective even when the chilblains are broken.

III.

Compound tincture of iodine;
 Collodion, equal volumes of each.
 Paint on several times daily.

IV.

Camphorav.oz. 1½
 Carbolic acid, crystal.....av.oz. ¼
 Tincture of aconite.....fl.dr. 1

Triturate together until a liquid is obtained, or place the ingredients in a bottle and agitate until solution occurs.

Direction: Paint with camel's hair pencil or by moistening cloths and applying morning and evening to the affected parts.

The above liquid can also be incorporated with 4 parts of simple cerate so as to form a salve, and this spread on cloth and applied night and morning.

V.

Resorcingr. 120
 Ichthyolgr. 120
 Tanningr. 120
 Waterfl.dr. 10

Mix and dissolve. Affix a "shake" label to the bottle.

This liquid is to be applied with a camel's hair pencil every night on retiring. In a few minutes the liquid dries into a kind of varnish. This application is highly recommended but its objection is that it causes blackening of the parts which does not go away for some time and in very delicate skins it sometimes produces cracks or fissures which may cause pain. In such cases the author of the above formula recommends to use the following which while not so promptly effective, still gives good results:

Resorcinav.oz. 1
 Gum arabic.....av.oz. ½

Talcum, powder.....av.oz. 1
 Waterfl.oz. 2
 Use like the preceding.

Cholera Remedies.

See Diarrhea and Dysentery Remedies.

Corn Eradicators.

Remedies for the removal of corns are very numerous and assume diverse forms such as liquid, salve, plasters, etc. One of the most common and most popular is a preparation of collodion containing extract of cannabis indica and salicylic acid, sometimes also strong lactic or glacial acetic acid. Another popular preparation is an ointment or cerate containing about 10 per cent. of salicylic acid. These are usually to be applied for from 3 to 5 nights consecutively, followed by a hot foot bath, when the corn can be picked out. If this first treatment does not produce satisfactory results, it should be repeated. Better results are obtained if a hot foot bath be taken preferably with some sodium bicarbonate in the water, before application of the remedy, then scraping or cutting off the caloused tissues as far as possible.

The variety of corn referred to is what is called a "hard" corn which attacks the top of the toes. "Soft" corns are the kind occurring between the toes and require different treatment.

Liquids.

I. Compound Salicylated Collodion is an excellent preparation. See formula in Part I under Collodions.

This is to be painted on the corn every night for 3 or 4 nights with a camel's hair pencil, followed by a hot foot bath when the corn can be picked out. If the first treatment does not entirely extract the corn it should be repeated.

This and similar preparations should be dispensed in small vials, and the top of the bottle and cork should receive a coating of melted paraffin to prevent evaporation of the ether and alcohol.

A small camel's hair pencil should accompany the bottle.

II.

Salicylic acid.....gr. 120
 Lactic acid, concentrated...gr. 80
 Collodion, to make.....fl.oz. 4
 Mix and dissolve. Use like the preceding.

III.

Extract of cannabis indica,
 (Squibb's)gr. 30
 Salicylic acid.....gr. 300
 Oil of turpentine.....fl.dr. 2½
 Acetic acid, glacial.....fl.dr. 1
 Collodionfl.oz. 5
 Mix the first three ingredients intimately, add the collodion, dissolve, and then add the acetic acid.

Use like No. I.

IV. Collodion is not absolutely necessary in these mixtures; the following may be used, for example:

Common rosin.....av.oz. ½
 Salicylic acid.....av.oz. ½
 Extract of cannabis indica
 (Squibb's)gr. 30
 Alcoholfl.oz. 1½
 Etherfl.oz. 2½
 Mix all and dissolve by agitation.

Salves.

V.

Salicylic acid.....av.oz. ½
 Simple cerate.....av.oz. 4
 Mix well.

This is to be applied to the corn on a piece of cloth every night for 3 or 4 nights, then follow with a hot foot bath when the corn may be picked out.

VI.

Salicylic acid.....av.oz. 1
 Ammonium chlorid.....av.oz. 1
 Acetic acid, glacial.....fl.dr. 2
 Wool fat, hydrous.....av.oz. 1
 White wax.....av.oz. 1
 Lardav.oz. 4

Melt the wax, incorporate the lard and wool fat, allow the mixture to cool somewhat, and thoroughly incorporate the other ingredients.

Use like the preceding.

VII.

Caustic soda or potassa....av.oz. 1
 Water, hot.....fl.oz. 1
 Glycerite of starch.....av.oz. 2

Corn Remedies (Cont'd).

Rub the alkali with the water to a smooth and uniform paste, and gradually incorporate the glycerite.

In using, spread a little of the salve on the corn, taking care not to get any on the surrounding parts. *Cover with a small piece of cloth and allow to remain for from 2 to 4 hours; then soak the foot in warm water. The corn may be extracted after one or two such applications.

Plasters.

VIII. Dissolve a mixture of 2 drams each of salicylic acid and ordinary or white rosin in 1 fluidounce of ether and pour this solution upon belladonna or opium plaster spread upon moleskin. This may then be cut up into suitable sizes and dispensed in small envelopes.

Directions: Apply a small piece of the plaster to the corn, and after 3 or 4 days follow with a hot foot bath. Repeat this treatment one or more times as may be necessary to extract the corn.

IX.

Salicylic acid.....av.oz. 1

Soap plaster.....av.oz. 6

Melt the plaster, add the acid, and stir frequently until cool. This is to be spread upon strong cloth, thin leather or any material suitable for a plaster.

This is to be used like the preceding.

For Soft Corns.

X. The remedies previously mentioned will prove of more benefit to "hard" corns than to "soft" corns. It has been recommended to treat the latter by painting with a solution of silver nitrate in 8 parts of distilled water every fourth or fifth day, in the meantime keeping the toes apart by means of a pledget of cotton smeared with petrolatum, zinc ointment or other bland fatty substance.

The cure or removal of corns is facilitated by frequent washing of the feet, followed by removal of all dead tissue.

Dry tannin placed between the toes where the corn is located is also recommended as a cure for "soft" corns.

Coughs and Colds, Remedies for.

Suggested titles for these remedies are Cough Remedy, Cough Mixture, Cough Syrup, Syrup of Tar and Wild Cherry, Children's Cough Cure, or Baby or Infant Cough Syrup (if intended for small children exclusively), White Pine Syrup, Honey of Hoarhound and Tar, Tar, Tolu and Wild Cherry, Tar and Hoarhound Cough Syrup, Lung Balsam, Expectorant, Cough Cordial, Cough Balsam, etc.

Opium in some form or a salt or derivative of morphine are constituents of almost every cough mixture. This should not be administered to small children or infants and hence it may be advisable to have two preparations, one without morphine, codeine, heroin or opium, or with only paregoric.

Other remedies are noticed under the head of Remedies for Throat Affections and under Gargles.

The dose of all these preparations is a teaspoonful every 2 or 3 hours, children in proportion, unless the article is made for small children exclusively.

Brown Mixture.

This is an excellent preparation for coughs and colds. The formula is in Part I under Mixtures, or the following, known as Improved Brown Mixture, may be used:

I.

Extract of licorice, purifiedav.oz. 2
Ammonium chlorid.....av.oz. 2
Paregoricfl.oz. 2
Wine of antimony.....fl.oz. 1
Spirit of nitrous ether.....fl.dr. 4
Syrupy glucose.....av.oz. 20
Water, to make.....fl.oz. 32
Mix all and dissolve.

Dose, 1 to 2 teaspoonfuls every 2 to 4 hours.

Two fluidounces of glycerite of licorice may be used for the extract and

the glucose may be replaced by simple syrup.

Compound Elixir of Licorice is a similar preparation in elixir form. See formula in Part I under Elixirs.

II. Compound Syrup of White Pine:

This preparation is also known as White Pine Expectorant and White Pine Balsam. The excellent formula of the N. F. is in Part I under Syrups. This preparation contains 4 grains of morphine sulfate in a pint ($1/32$ gr.) to the fluidram. The preparations of the market usually contain 3 grains of morphine, in the form of acetate, to the pint. The morphine may be omitted or it may be replaced by 3 grains of codeine sulfate or phosphate to the pint or 2 or 4 grains of heroin hydrochlorid to the pint ($1/64$ or $1/32$ gr. to the fluidram); or a small amount of ammonium chlorid or syrup or glycerite of tar may be added.

The N. F. menstruum for extraction of the drugs is a mixture of 1 volume of alcohol and 3 of water but it has been claimed that an equally effective menstruum is a mixture of 1 volume of glycerin and 2 of water.

Another method of making compound syrup of white pine is the following:

Tincture of pine gum.....	fl.oz 8
Fluid extract of ipecac.....	fl.oz. 2
Chloroform.....	fl.dr. 4
Morphine sulfate.....	gr. 32
Magnesium carbonate.....	av.oz. 2
Sugar.....	av.oz. 48
Water, to make.....	fl.oz. 64

Rub the magnesium carbonate in a mortar with tincture and fluid extract until well mixed, then triturate with 24 fluidounces of water, gradually added, filter, and through the filter add enough water to make 34 fluidounces of filtrate. To the latter add the chloroform, morphine and sugar, dissolve by agitation, and strain.

The tincture of pine gum is made from 1 av. ounce of gum turpentine and 7 fluidounces of alcohol, agitating occasionally till the gum is dissolved.

III. Syrup of White Pine and Tar Comp.:

Tartar emetic.....	gr. 16
Ammonium chlorid.....	av.oz. 2
Water.....	fl.oz. 10
Glycerite of tar.....	fl.oz. 2
Syrup of squill.....	fl.oz. 16
Comp. syrup of white pine, to make.....	gal. 1

Dissolve the tartar emetic and ammonium chlorid in the water and add the other ingredients.

IV. Syrup of Tar and Wild Cherry:

This popular preparation may be made in various ways, as follows:

A.

Wild cherry, ground.....	av.oz. 16
Pine tar.....	av.oz. 2
Morphine sulfate.....	gr. 16
Sugar.....	av.lb. 5
Water.....	sufficient

Moisten the wild cherry with water, pack in a percolator, and let stand over night. Wash the tar with some cold water, then, pour on 80 fluidounces of boiling water and let stand for 24 hours, stirring occasionally. With this water percolate the drug so as to obtain 80 fluidounces of liquid. In this dissolve the sugar and morphine by agitation, and strain.

B.

Ammonium chlorid.....	av.oz. 8
Morphine sulfate.....	gr. 16
Water.....	fl.oz. 16
Comp. syrup of squill.....	fl.oz. 12
Syrup of tolu.....	fl.oz. 16
Syrup of tar.....	fl.oz. 24
Syrup of wild cherry.....	fl.oz. 60

Mix all, dissolve the solids by agitation and strain if necessary.

C.

Fluid extract of ipecac.....	fl.dr. 4
Fluid extract of lobelia.....	fl.dr. 6
Tincture of opium.....	fl.oz. 6
Vinegar of squill.....	fl.oz. 10
Sugar.....	av.oz. 12
Syrup of wild cherry.....	av.oz. 44
Syrup of tar.....	fl.oz. 60

Mix the fluid extracts, tincture and vinegar, let stand for 24 hours, filter, and in the filtrate dissolve the sugar by agitation. To the solution add the syrups.

Coughs and Colds (Cont'd).**D.**

Oil of tar.....	fl.oz.	1
Magnesium carbonate.....	av.oz.	2
Tincture of opium.....	fl.oz.	4
Fluid extract of ipecac.....	fl.oz.	4
Fluid extract wild cherry.....	fl.oz.	6
Water	fl.oz.	64
Sugar	av.lb.	6

Rub the oil thoroughly with the magnesium carbonate, add the fluid extracts and water, mix well, filter, add the tincture and sugar to the filtrate dissolve the latter by agitation and strain.

V., Comp. Syrup of Wild Cherry:

Wild cherry.....	av.oz.	16
Spikenard.....	av.oz.	4
Ipecac	av.oz.	1
Bloodroot	av.oz.	1
Tincture of opium.....	fl.oz.	4
Sugar	av.lb.	5
Alcohol, water, each, to make	gal.	1

Mix the drugs in a ground condition and extract by percolation with a mixture of 1 volume of alcohol and 3 of water, so as to obtain 72 fluidounces of percolate. To this add the tincture of opium and sugar, dissolve the latter by agitation and strain.

VI. Syrup of Wild Cherry and Hoarhound:

Wild cherry, ground.....	av.oz.	20
Hoarhound	av.oz.	8
Glycerin	fl.oz.	8
Alcohol	fl.oz.	8
Sugar	av.lb.	5½
Water, to make.....	gal.	1

Mix the glycerin and alcohol with 64 fluidounces of water; moisten the wild cherry and hoarhound with 16 fluidounces of this mixture, pack in a cylindrical percolator tightly covered; after 24 hours' maceration proceed with percolation, using the remainder of the menstruum, and afterward sufficient water to make 72 fluidounces of percolate; in this dissolve the sugar by agitation, without heat, and strain.

VII. Honey of Hoarhound and Tar:

Oil of tar.....	fl.dr.	4
Oil of anise.....	drops	2
Magnesium carbonate.....	dr.	2
Fl. ext. of hoarhound.....	fl.oz.	2

Rum	fl.oz.	16
Water	fl.oz.	16
Honey, to make.....	fl.oz.	64

Triturate the oils of tar and anise with the magnesium carbonate until well mixed, then incorporate the fluid extract, water and rum, let stand for 24 hours, and filter. To the filtrate add the honey.

VIII. Honey and Tolu:

Tincture of tolu.....	fl.oz.	2
Paregoric	fl.oz.	8
Syrup of squill.....	fl.oz.	8
Honey, to make.....	fl.oz.	64

IX. Chlorodyne Cough Cure:

This is a green, turbid mixture containing cannabis indica.

Tincture of cannabis.....	fl.oz.	1
Tincture of tolu.....	fl.oz.	2
Fluid extract of lobelia.....	fl.oz.	1
Chloroform	fl.dr.	4
Morphine sulfate.....	gr.	16
Tartar emetic.....	gr.	16
Water	fl.oz.	2
Spirit of peppermint.....	m.	40
Simple syrup.....	fl.oz.	60

Dissolve the morphine and tartar emetic in the water; mix the tinctures, fluid extract, spirit and chloroform, shake well, add the aqueous solution previously prepared and the syrup and mix thoroughly by vigorous agitation.

This is to be well shaken before use.

X. Yerba Santa Cough Mixture or**Compound Syrup of Yerba Santa:**

Yerba santa.....	av.oz.	2
Grindelia	av.oz.	1
Wild cherry.....	av.oz.	1
Licorice root.....	av.oz.	1
Ammonium bromid.....	av.oz.	1
Pine tar.....	av.oz.	1½
Sugar	av.oz.	16
Glycerin	fl.oz.	4
Alcohol, water, each.....	sufficient	

Mix the four drugs, reduce them to coarse powder and extract in the usual way by percolation, using first a menstruum of the glycerin and 8 fluidounces each of alcohol and water and then followed by diluted alcohol until 22 fluidounces of percolate are obtained. To this add the ammonium bromid and tar, macerate a few hours, agitating occasionally, filter, and in the filtrate

dissolve the sugar by agitation and strain if necessary.

XI. The following may be sold as a "flaxseed or linseed cough syrup or balsam":

Raw linseed oil.....	f℥.oz. 4
Oil of cinnamon.....	f℥.dr. 1
Oil of wintergreen.....	f℥.dr. 1
Oil of sassafras.....	f℥.dr. 1
Acacia, powder.....	av.oz. 1
Mucilage of Irish moss.....	f℥.oz. 4
Glycerin	f℥.oz. 2
Simple syrup.....	f℥.oz. 5
Morphine sulfate.....	gr. 4
Chloral hydrate.....	av.oz. 1
Diluted hydrocyanic acid...	f℥.dr. 1
Water, to make.....	f℥.oz. 32

Make an emulsion of the four oils with the acacia, mucilage and a portion of the water, add the glycerin and syrup, dissolve the morphine and chloral in the remainder of the water and add this solution and the acid to the emulsion.

The morphine and chloral or either of them may be omitted if desired; and the mucilage of Irish moss may be replaced by an equivalent amount of powdered acacia.

Emulsion of Linseed Oil, Part I, is a similar preparation and may be used for the above.

XII. "C. C." Cough Mixture:

This is used in a Philadelphia hospital.

Codeine sulfate.....	gr. 16
Diluted hydrocyanic acid...	f℥.dr. 4¼
Spirit of chloroform.....	f℥.oz. 4
Mucilage of acacia.....	f℥.oz. 4
Syrup of wild cherry, to make	f℥.oz. 16

XIII. This preparation is known as Davis' Cough Mixture:

Ammonium chlorid.....	gr. 720
Tartar emetic.....	gr. 8
Morphine sulfate.....	gr. 12
Syrup of licorice.....	f℥.oz. 16

XIV. This is said to be the original prescription for Dr. Hartshorne's Cough Mixture:

Compound spirit of ether....	f℥.oz. 3
Solution of morphine sulfate (gr. to 1 oz.).....	f℥.oz. 3
Camphor water.....	f℥.oz. 3½

Mucilage of acacia.....	f℥.oz. 3½
Syrup of squill.....	f℥.oz. 4

XV. Fothergill's Hydrobromic Acid Cough Mixture:

Spirit of chloroform.....	m. 20
Hydrobromic acid.....	m. 30
Syrup of squill.....	f℥.dr. 1
Water, to make.....	f℥.oz. 1

This is one adult dose, to be taken 3 times a day; for children, the dose is to be reduced according to age.

XVI. Dr. Wood's Lemon Juice Cough Mixture:

Potassium citrate.....	gr. 60
Lemon juice.....	f℥.dr. 2
Syrup of ipecac.....	f℥.dr. 4
Simple syrup, to make....	f℥.oz. 6

The dose is a tablespoonful 4 to 6 times a day.

XVII. Dr. Child's Cough Mixture:

Wine of ipecac.....	f℥.oz. 1
Paragoric	f℥.oz. 1
Syrup of squill.....	f℥.oz. 2
Simple syrup.....	f℥.oz. 4
Water	f℥.oz. 24

Cough and Cold Mixtures for Small Children.

Many of the above mentioned cough and cold mixtures contain morphine, cannabis indica or other substance that would forbid their administration to infants and small children and hence it is customary, or at least advisable, to have a cough and cold remedy for adults and older children and another one for infants and small children. Of the above mentioned formulas, Nos. I, II (if made without opiates), VI, VII, VIII, X or XI may be recommended for small children. The following preparations may be called Children's Cough Cure, Baby Cough Syrup, Infant Cough Mixture or other similar appropriate name. The usual dose for a child 2 or 3 years old is one teaspoonful every 2 or 3 hours.

XVIII.

Ammonium chlorid.....	av.oz. 2
Chloroform	f℥.dr. 3
Syrup of ipecac.....	f℥.oz. 1
Syrup of tolu.....	f℥.oz. 10
Syrup of licorice, to make...	f℥.oz. 64
Mix and dissolve.	

Coughs and Colds (Cont'd).**XIX.**

Ammonium chlorid.....av.oz.	2
Comp. syrup of squill.....fl.oz.	4
Syrup of tolu.....fl.oz.	4
Syrup of ipecac.....fl.oz.	8
Paregoric.....fl.oz.	6
Water.....fl.oz.	8
Simple syrup, to make....fl.oz.	64

Dissolve the ammonium chlorid in the water, and add the other ingredients.

XX. Besides the cough and cold preparations already mentioned as being in Part I, that portion of this work also contains formulas for Pectoral Syrup (see formula under Syrups) and Stokes' Expectorant Mixture (see formula under Mixtures).

The following is also an excellent preparation:

Wild cherry.....av.oz.	4
Licorice root.....av.oz.	2
Herbane leaves.....av.oz.	2
Anise seed.....av.oz.	1½
Bloodroot.....av.oz.	½
Chloroform.....m.	30
Ammonium chlorid.....av.oz.	1
Sugar.....av.oz.	32
Alcohol, water, to make....fl.oz.	64

Reduce the five drugs to coarse powder and extract by percolation with a mixture of 1 volume of alcohol and 4 oz. water to obtain 44 fluidounces of percolate. In this dissolve the sugar and ammonium chlorid by agitation, strain, and add the chloroform.

As may be observed this preparation is free from opiates.

Cough (Whooping) Remedies.**I.**

Butyl-chloral hydrate.....gr.	15
Potassium bromid.....gr.	60
Ether.....drops	25
Tincture of belladonna....drops	15
Tincture of henbane.....drops	25
Syrup of tolu, to make....fl.oz.	4
Mix well.	

The dose for a child two years is a teaspoonful every 2 or 3 hours.

II.

Bromoform.....m.	30
Tincture of tolu.....fl.dr.	1
Mucilage of acacia.....fl.dr.	2

Simple syrup.....fl.dr.	4
Peppermint water, to make.fl.oz.	4

Place the mucilage in the bottle, add an equal volume of syrup, then the bromoform and tincture in portions, shaking well after each addition. Then add the remainder of the syrup and the water, shaking thoroughly meanwhile.

Bromoform is a very heavy liquid and from any ordinary mixture it separates very quickly. The above is a thin emulsion which separates but retains the bromoform in suspension. It should be shaken before use.

The dose for a child one year old is one teaspoonful 3 to 5 times daily. Older children require larger doses or the amount of bromoform and mucilage in the mixture may be increased.

III. Formaldehyde in 1 per cent. solution as a spray or as direct application in 5 per cent. solution to the pharynx is highly recommended. Formaldehyde in vapor form is recommended by the Health Department of Chicago.

IV.

Ether.....fl.dr.	12
Chloroform.....fl.dr.	6
Oil of turpentine.....fl.dr.	2

This is to be used as an inhalation during the paroxysms of coughing. It is to be sprinkled upon a cloth or sponge and held to the nose.

Croup (Catarrhal Laryngitis) Remedies.

I. The spasmodic attacks of croup occur at night. The usual method of treatment is to give an emetic such as wine of antimony, syrup of ipecac, or turpeth mineral. Another method of treatment is by means of sedatives, such as the following:

Chloral hydrate.....gr.	80
Potassium bromid.....gr.	40
Ammonium bromid.....gr.	32
Cinnamon water, to make....fl.oz.	2

This may be made more palatable by substituting syrup of cinnamon for a portion of the water, or else adding a few drops of chloroform.

One teaspoonful is the dose, to be repeated in 20 minutes, if not relieved.

This is intended for a child about 5 years old. Older children require larger doses, younger children smaller ones.

The chloral relieves the spasms of the larynx, and the bromid allays the nervousness so that the patient is soon asleep, awakening in the morning as well as usual; there is also little danger of an attack the next night.

II. This is for a so-called "croupy" cough:

Tartar emetic.....	gr. 1 or 2
Fluid extract of ipecac.....	m. 30
Fluid extract of senega.....	fl.dr. 2
Syrup of squill.....	fl.oz. 1
Simple syrup, to make.....	fl.oz. 4

The dose for a child 3 years old is a teaspoonful every 3 hours.

IV. An excellent external application for croup is Compound Liniment of Stillingia. For the formula see Liniments in Part I.

Diarrhea and Dysentery, Remedies for.

These preparations may be put under the title Blackberry Balsam, Blackberry Cordial, Blackberry Elixir, Diarrhea Cordial, Diarrhea Cure, Carminative, etc.

The ingredients of these preparations number among the following: Blackberry root bark, blackberry juice, rhubarb, nutgall, witchhazel bark, catechu, kino, peppermint, opium, capsicum, ginger, aromatics and syrups. The blackberry juice and syrup are introduced for the purpose of disguising the styptic taste of the blackberry root bark, nutgall or other astringent. This is also one object of employing the aromatics, these latter also serving as carminatives. Capsicum is introduced with the view of utilizing its stimulant properties. Opium should be introduced with some misgivings, for, as a rule, these "cordials" or "balsams" are given to children. In fact, it may be advisable to have two preparations, one containing opium and intend-

ed for older children and adults, the other, without opium, for infants and younger children.

I. Among the preparations mentioned in Part I which are excellent remedies for the treatment of cholera and diarrhea are Compound Elixir of Blackberry and Compound Elixir of Dewberry (formulas under Elixirs), Aromatic Syrup of Blackberry (formula under Syrups), Chlorodyne, Cholera Mixtures (formulas under Mixtures), and Dalby's Carminative and Mixture of Magnesia and Asafetida or Dewee's Carminative (formulas under Mixtures).

II. This is the diarrhea tablet advised by the Cincinnati Board of Health:

Opium	gr. 1/4
Camphor	gr. 1/4
Ipecac	gr. 1/8
Lead acetate	gr. 1/6
For one tablet.	

III. This is the formula for Dr. Norman Gay's Diarrhea Tablet:

Mercury with chalk.....	gr. 1/10
Opium	gr. 2/5
Kino	gr. 4/5
Camphor	gr. 4/5
Aromatic powder	gr. 4/5
Bismuth subnitrate	gr. 4/5
Sodium bicarbonate.....	gr. 4/5

Blackberry Balsam or Cordial.

The following are formulas for this favorite diarrhea remedy. Another formula is in Part I under Compound Elixir of Blackberry (see Elixirs). If the preparation contains ginger, it may be known as Blackberry Cordial or Balsam with Ginger or Compound Cordial of Blackberry and Ginger.

The dose for an adult is a tablespoonful, repeated every 1, 2 or 3 hours as necessary; children in proportion.

IV.

Blackberry juice	fl.oz. 32
Catechu	av.oz. 2
Cinnamon	av.oz. 1/2
Nutmeg	av.oz. 1/2
Coriander	av.oz. 1/2
Opium	dr. 1
Sugar	av.oz. 16
Alcohol	fl.oz. 20
Simple syrup, to make.....	fl.oz. 64

Diarrhea Remedies (Cont'd).

Reduce the drugs to fine powder, macerate with the juice and alcohol for 7 days, agitating frequently, filter, in the filtrate dissolve the sugar, and then add simple syrup to make 64 fluidounces.

V.

Blackberry root bark.....av.oz.	2
Cinnamon, Saigon.....av.oz.	2
Nutgallav.oz.	2
Ginger, Africandr.	2
Clovedr.	2
Macedr.	2
Sugarav.oz.	32
Blackberry juicefl.oz.	28
Alcoholfl.oz.	20

Mix the six drugs, reduce them to coarse powder, extract in the usual way by percolation with a mixture of the juice and alcohol, and in the percolate dissolve the sugar by agitation.

VI.

Fluid extract of blackberry rootfl.oz.	2
Tincture of ginger.....fl.oz.	2
Tincture of opium.....fl.oz.	2
Tincture of catechu.....fl.oz.	2
Tincture of kino.....fl.oz.	2
Tincture of capsicum.....fl.dr.	4
Sugarav.oz.	4
Alcoholfl.oz.	18
Water, to make.....fl.oz.	64

Mix all, dissolve the sugar by agitation and strain.

Extract or Essence of Jamaica Ginger

This preparation has been and is to some extent a popular favorite for mild forms of diarrhea and summer complaint. It is also used as a quick stimulant for cramps due to any cause, colic, chills, etc., and for flatulency and dyspepsia. It is advised to put a few drops into the drinking water in summer time to prevent bowel complaints. The following are excellent formulas. The first is a plain tincture, the second is aromatized. Both are stronger than the U. S. P. tincture.

VII.

Jamaica ginger, moderately fine powderav.oz.	24
Alcohol, to make.....fl.oz.	64

Extract the drug in the usual manner by percolation.

VIII. Formula of the Illinois Pharmaceutical Association:

Ginger, unbleachedav.oz.	16
Calamusav.oz.	1
Canada snakerootav.oz.	1
Cinnamondr.	2
Macedr.	2
Clovedr.	2
Alcohol, to make.....fl.oz.	64

Mix the drugs, reduce them to moderately fine powder, and extract in the usual way by percolation.

Diarrhea Mixtures for Infants.

Infantile diarrhea occurs in children between 6 months and 2 years of age. It is due generally to teething and improper feeding. Poor or partly decomposed milk, unclean dishes, nursing bottles with long tubes and unhygienic surroundings will, in summer time, quickly cause diarrhea in infants, popularly called "summer complaint." The best treatment consists of combinations of mild alkalies, like prepared chalk, combined with bismuth subnitrate or subcarbonate, mild antiseptics like Lister's Antiseptic Solution, benzonaphthol, zinc sulfocarbonate, etc., and usually also with rhubarb and with astringents like kino, catechu or rhatany. Chalk Mixture is used (see formula in Part I), but is usually combined with other substances, or use the following:

IX.

Bismuth salicylatedr.	4
Glycerinfl.dr.	2
Listers' antiseptic solution...fl.dr.	4
Chalk mixture, to make....fl.oz.	4

The dose is one teaspoonful every 2 or 3 hours as may be necessary.

X.

Tincture of catechu or kino..fl.dr.	2
Fluid extract of rhubarb....fl.dr.	2
Compound chalk powder.....dr.	4
Bismuth subnitratedr.	2
Glycerinfl.oz.	1
Cinnamon water, to make....fl.oz.	4

The glycerin preserves the mixture for an indefinite period of time.

The dose for a child one year old is a teaspoonful every half, one or two hours according to the severity of the symptoms.

For Dysentery.

Dysentery is an inflammatory disease of the large intestine, characterized by the frequent passage of stools containing blood and mucus. It frequently follows ordinary diarrhea.

In cases of a catarrhal type that tend to linger, an excellent remedy is Acid Camphor Mixture, better known as Hope's Camphor Mixture (see formula in Part I under Mixtures). The dose is a tablespoonful or two every 2 hours. The intense pains may be relieved by Chlorodyne. Other useful combinations are the following:

XI.

Deodorized tincture opium...fl.dr. 2
Diluted sulfuric acid.....fl.dr. 2
Comp. tincture cardamom...fl.oz. 1½
Camphor water, to make.....fl.oz. 6

The dose is a tablespoonful, undiluted, every 3 hours.

XII.

Calomelgr. 1/8
Camphorgr. 1/16
Morphine sulfate.....gr. 1/16
Capsicumgr. 1/16
Ipecacgr. 1/32
For one tablet.

The dose is one every hour, or in urgent cases every half hour, until the character of the discharge is improved.

Carminative or "Gripe" Mixtures for Infants.

The mixtures mentioned under this heading are used for griping (wind colic or flatulence) and for mild cases of diarrhea in infants. The dose of these is about a teaspoonful for a child one year old. The carminatives mentioned in Part I are Dewee's Carminative (see Mixture of Magnesia and Asafetida) and Dalby's Carminative (see Mixture, Carminative); also Compound Powder of Rhubarb and Anisated Powder of Rhubarb and Magnesia (see formulas under Powders in Part I). The dose of these powders is also about half a teaspoonful to a child one year old. Compound Syrup of Rhubarb and Potassium or Neutralizing Cordial (see

formula in Part I under Syrups) is good for the same purpose, as is also the following:

XIII. This is called Paris' Carminative Mixture:

Calcined magnesia.....av.oz. 1
Comp. tincture lavender....fl.oz. 1
Peppermint waterfl.oz. 4
Syrup of ginger.....fl.oz. 4
Spirit of caraway (1 in 30)..fl.oz. 7

The dose is one-half teaspoonful to a child one year old.

XIV. This preparation has been called "Pain Dispeller" and is useful for cramps, diarrhea, etc., in doses of one-half to one teaspoonful:

Aromatic spirit of am-
moniafl.oz. 1
Compound spirit of ether....fl.oz. 1
Spirit of peppermint.....fl.oz. 1
Spirit of camphor.....fl.oz. 1
Comp. tincture of lavender..fl.oz. 1
Tincture of capsicum.....fl.oz. 1
Tincture of opium.....fl.oz. 1
Tincture of rhubarb.....fl.oz. 1
Alcoholfl.oz. 3
Waterfl.oz. 5

Dyspepsia and Indigestion, Remedies for.

Owing to the prevalence of dyspepsia, remedies for this complaint are in considerable demand. Most of the "bitters" and the liver remedies, and many of the blood purifiers are usually recommended for dyspepsia.

The remedies recommended especially for dyspepsia contain some stomachic tonic like golden seal, columbo, gentian bitter orange, etc., combined with a laxative like aloes, sodium phosphate, rhubarb, etc.; sometimes an alkali like sodium bicarbonate, as well as a carminative or stimulant like peppermint, capsicum, elixir, etc.

I.

Fl. ext. of bitter orange....fl.dr. 10
Fluid ext. of rhubarb.....fl.dr. 5
Fluid ext. of columbo.....fl.dr. 5
Fluid ext. of chamomile....fl.dr. 5
Fluid ext. of life everlastingfl.dr. 5
Sodium phosphateav.oz. 2
Water, hotfl.oz. 8
Simple elixir, to make.....fl.oz. 64

Dyspepsia Remedies (Cont'd).

Mix the fluid extracts with a portion of the elixir, dissolve the sodium salt in the water, add to the previous mixture, then incorporate the remainder of the elixir, and filter.

The dose is a teaspoonful 3 times a day.

II.

Rhubarb	av.oz.	3
Peppermint	av.oz.	3
Potassium carbonate.....	av.oz.	1
Golden seal	av.oz.	$\frac{3}{4}$
Cape aloes	gr.	60
Capsicum	gr.	15
Sugar	av.oz.	24
Alcohol, water, each.....	sufficient	

Mix the rhubarb, golden seal, aloes, peppermint and capsicum, reduce to coarse powder, extract by percolation with a mixture of 3 volumes of alcohol and 10 of water, so as to obtain 50 fluid-ounces of percolate, having first dissolved the potassium carbonate in the water. In the percolate dissolve the sugar, either by agitation or percolation, and then add enough more of the menstruum to make 64 fluidounces.

The dose is a teaspoonful 3 times a day.

III.

Sodium bicarbonate.....	av.oz.	1
Sodium sulfate.....	av.oz.	2
Comp. tincture of gentian..	fl.oz.	4
Fluid extract of senna.....	fl.dr.	2
Fluid extract of rhubarb...	fl.dr.	4
Oil of caraway.....	drops	20
Water, to make.....	fl.oz.	16

Dissolve the sodium sulfate and bicarbonate in the water, add the oil of caraway to the tincture and fluid extracts and mix together. The dose is a tablespoonful after meals and at bedtime, in some water.

IV.

Comp. tincture of gentian...	fl.oz.	1
Tincture of columbo.....	fl.dr.	4
Tincture of nux vomica.....	fl.dr.	$\frac{1}{2}$
Nitromuriatic acid	fl.dr.	2
Simple syrup, to make.....	fl.oz.	4

The dose is a teaspoonful 3 times daily.

V. Many kinds of dyspepsia tablets have appeared on the market. Something very similar may be prepared according to this formula:

Sodium bicarbonate	gr.	5
Resin of jalap.....	gr.	1
Ext. of hydrastis, powder....	gr.	$\frac{3}{8}$
Menthol	gr.	$\frac{1}{8}$

Make 1 tablet. Pepsin may be added if desired, but it will not serve any purpose whatever in the mixture.

One, two or three of the tablets may be taken after each meal.

This mixture may conveniently be compressed by one of the hand compressors now so readily obtained.

VI.

Pepsin (1:3000).....	gr.	$\frac{1}{2}$
Bismuth subnitrate	gr.	1
Magnesium carbonate	gr.	2
Jamaica ginger	gr.	$\frac{1}{8}$
Sugar, to make.....	gr.	10

Take one or two after each meal.

Ear Medicines.

Medicines for the ear are of two kinds, one for earache, which may be called Earache Drops, Earache Remedies, or Earache Oils, the other being intended for the improvement of the hearing, the latter kind being known as Ear Oils or Acoustic Oils. Of course no medicine will actually improve the hearing when impaired, unless it be due to a waxy concretion present, which may be softened and dissolved.

Earache Remedies.**I.**

Olive oil	fl.dr.	4
Chloroform	fl.dr.	4

II. A mixture of equal parts of laudanum and sweet oil is an old favorite.

Acoustic Oils.**III.**

Oil of turpentine.....	fl.dr.	1
Oil of sweet almonds.....	fl.dr.	6
One to 2 drops on cotton in the ear.		

IV.

Olive oil	fl.oz.	2
Oil of cajeput.....	m.	15
Oil of sassafras.....	m.	30
Acetic ether	m.	10
Camphor	gr.	60
Mix and dissolve.		

Eczema or Salt Rheum, Remedies for.

Eczema is a very common skin disease which manifests itself in a great variety of forms, all of which require different treatment. The formulas given below are used. Sometimes a lotion or powder acts best, at other times an ointment is to be preferred.

The disease is believed not to be of a parasitic character.

I.

Rice flour	dr. 4
Talcum	dr. 2
Zinc oleate	dr. 1
Bismuth subnitrate	dr. 1

This should be dusted freely on the surface, and repeated every 2 or 3 hours. Sometimes, on account of the intense pruritis or itching, it is necessary to apply a cooling application; a solution of thymol, 1 to 1,000, is very good. Salicylic acid and menthol are also useful.

II.

Menthol	gr. 1
Salicylic acid	dr. 1
Tincture of benzoïn.....	fl.dr. 3
Cologne water	fl.dr. 6
Glycerin	fl.dr. 6
Alcohol	fl.oz. 3
Water	fl.oz. 3

Dissolve the menthol and acid in the alcohol, add the tincture and cologne and then the other ingredients, and shake well.

After applying this, the above powder (No. 1) should be dusted on freely. Continue the cooling treatment with thymol as long as the active stage continues, and then use a mild ointment containing substances that influence the inflammation, such as the next formula.

III.

Carbolic acid	drops 15
Ichthyol	gr. 50
Bismuth subnitrate	gr. 75
Zinc oxid	av.oz. 1½
Cold cream	av.oz. 1
Petrolatum	av.oz. 1

Apply twice a day.

This is to be used in the mild stage.

IV. This is recommended by Unna.

Zinc oxid	av.oz. 4
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Chalk, precipitated	av.oz. 2
Lead water	fl.oz. 2
Linseed oil, raw.....	fl.oz. 2

Mix the chalk and zinc oxid; emulsify the lead water and linseed oil by shaking together. Finally mix the powders with the emulsion, rubbing constantly until a smooth paste is obtained.

V. Lassar's Paste is also used. See formula in Part I.

Epilepsy Remedy.

"Brown-Sequard's Anti-Epileptic Mixture" is a preparation still in extended use, but various formulas for it have appeared. The following may be employed:

I.

Sodium bromid.....	gr. 180
Potassium bromid	gr. 180
Ammonium bromid	gr. 180
Potassium iodid	gr. 90
Ammonium iodid	gr. 90
Ammonium carbonate	gr. 60
Tincture of columbo.....	fl.oz. 1½
Water, to make.....	fl.oz. 8

Mix, dissolve, and filter.

II.

Potassium iodid	gr. 60
Potassium bromid	gr. 60
Ammonium bromid	gr. 30
Potassium bicarbonate	gr. 40
Infusion of columbo.....	fl.oz. 6

Mix, dissolve and filter.

The dose is a teaspoonful before each meal and three dessertspoonfuls on going to bed. If the pulse is feeble, the potassium bicarbonate is replaced by ammonium carbonate and the infusion by 1½ fluidounces of tincture of columbo and 4½ fluidounces of water.

Eye Medicines.

The public demand for preparations for the eye is not large, but it is quite steady, and the formulas here given will suffice for the ordinary affections. If the condition of the eye seems at all serious or is long continued, the patient should invariably be advised to consult a physician who makes a specialty of ophthalmology.

The remedies for the eye may be either lotions or ointments. Suitable names are

Eye Medicines (Cont'd).

the following: Reliable Eye Salve (or Water), White Eye Salve (or Water), Standard Eye Salve (or Water), Imperial Eye Salve (or Water), White Rose Eye Water, etc.

Waters.**I.**

Boric acid	gr. 80
Zinc sulfate	gr. 8
Glycerin	fl.oz. 1
Rose water	fl.oz. 7

Mix, dissolve and filter.

II. This is known as Mackenzie's Eye Lotion.

Mercuric chlorid	gr. 2
Ammonium chlorid	gr. 12
Cochineal	gr. 3
Alcohol	fl.dr. 2
Water, to make.....	fl.oz. 16

Mix and filter after 12 hours.

Salves.

All ointments for the eyes must be reduced to a thoroughly smooth condition.

III.

Zinc oxid	gr. 5
Morphine sulfate.....	gr. 2
Camphor	gr. 1
White wax	dr. 2
Lard, fresh	dr. 6

Oil of rose, enough to perfume.

Melt the wax, add the lard, allow to cool, when nearly cold add the camphor, allow it to dissolve, and then incorporate with the other ingredients so as to make a smooth ointment.

IV.

Morphine sulfate	gr. 5
Yellow mercuric oxid.....	gr. 15
Zinc oxid	gr. 60
White petrolatum	av.oz. 2

Mix well.

Feet, Preparations for the.

The preparations here mentioned are used for tenderness or soreness of the feet, also for excessive perspiration and fetor. These affections are tolerably common, but do not appear to the public to be of sufficient importance to make it necessary to consult a physician. Most remedies recommended by pharmacists are in powder, by reason of the

majority of them containing talcum with salicylic acid. These powders should all they will prove irritating to the already sensitive integument. They should be sprinkled into the socks and shoes in the morning.

I.

Salicylic acid	gr. 105
Boric acid, fine powder.....	gr. 350
Talcum, fine powder.....	av.oz. 7

This is the Salicylated Powder of Talcum of the N. F. The corresponding preparation of the German Pharmacopœia contains starch instead of boric acid.

II.

Mercuric chlorid	gr. 1
Sodium salicylate	av.oz. 1
Prepared chalk	av.oz. 1

Dust a little of the powder in the socks every morning.

III.

Salicylic acid	av.oz. $\frac{1}{4}$
Alum, powder	av.oz. $\frac{1}{2}$
Starch	av.oz. 2
Talcum, powder	av.oz. 7
Oil of bergamot.....	fl.dr. 1
Alcohol	fl.dr. 4

Dissolve the acid and oil in the alcohol, and rub in mortar with the other ingredients until the alcohol is dissipated.

IV.

Orris, powder	av.oz. 1
Zinc oxid	av.oz. 3
Talcum powder	av.oz. 6

V.

Potassium permanganate.....	gr. 8
Thymol	gr. 16
Distilled water	fl.oz. 16

Mix and dissolve.

This is to be used as a wash once daily for excessive perspiration and fetor of the feet.

Female Disorders, Remedies for.

Remedies for female disorders are of several kinds. Many are uterine tonics (such as Nos. I and III below), these being intended to strengthen or "tone up" organs of gestation to fit woman to endure child bearing with comfort, to prevent, relieve and cure distressing

pains which occur from excessive or tardy menstruation, and to relieve the nervous disorders accompanying these complaints. These preparations are known by such names as Woman's Friend, Female Remedy, Female Tonic, etc.

I.

Fluid ext. of squaw vine....	fl.oz. 4
Fluid ext. of cramp bark....	fl.oz. 2
Fluid ext. of blue cohosh....	fl.oz. 2
Fluid extract of damiana....	fl.oz. 2
Fluid extract of helonias....	fl.oz. 2
Fluid extract of cinchona....	fl.oz. 2
Sherry wine	fl.oz. 50

The dose is a tablespoonful 3 times a day.

II.

Fluid ext. of castor oil plant leaves	fl.oz. 12
Fennel seed	av.oz. 4
Anise seed	av.oz. 4
Wintergreen herb	av.oz. 4
Simple elixir, to make.....	fl.oz. 48

Mix the three drugs, reduce to coarse powder, and extract by slow percolation, using the elixir as a menstruum. When 36 fluidounces of percolate are obtained, add to it the fluid extract.

The dose is a teaspoonful every 3 hours.

III. The following are excellent "periodical pills," so-called, for retarded menstruation:

Ergotin	gr. 1
Aloes	gr. 1
Extract of cotton root.....	gr. 1
Ferrous sulfate, dried.....	gr. 1
Oil of savin.....	m. 1/2

Or the emmenagogue pills mentioned in Part I under Pills may be used.

IV. The following makes an excellent uterine astringent tablet useful for leucorrhea:

Extract of henbane.....	gr. 1
Extract of witch hazel.....	gr. 1
Extract of helonias.....	gr. 1/2
Extract of opium.....	gr. 1/4
Boric acid	gr. 5
Tannic acid	gr. 1
Salicylic acid	gr. 1
Alum	gr. 1
Eucalyptol	gr. 1/16
Thymol	gr. 1/32

Use 2 to 4 tablets in a quart of luke-

warm water as a vaginal douche twice daily.

Gargles.

See formula under Throat Affections, Remedies for.

Gonorrhea and Gleet, Remedies for.

Remedies for gonorrhea may be used externally (so-called) or may be exhibited internally. The external remedies are usually in the form of "injections," or "washes," as they are also termed. These usually contain a zinc sulfate or acetate combined with hydrastis or one of its alkaloids, lead acetate, opium, carbolic acid, or other substance. The remedies for internal use contain copaiba or santal oil or both combined with cubeb, matico, spirit of nitrous ether, gum turpentine, eucalyptus, etc. These internal medicines may take the form of paste, capsules, pills or emulsions. The "external" and "internal" remedies may be used simultaneously, although there is no benefit to be gained by their conjoint use.

The "external" remedies usually are known by some fanciful or odd title, or by a number such as "55," "400," etc. The "internal" remedies are usually known by such titles as Sandalwood Pills, Paste of Copaiba, Cubeb and Santal, Paste of Copaiba and Santal, Paste of Copaiba, Cubeb and Matico, Gonorrhea Paste, Confection of Cubeb and Copaiba, Mass of Copaiba, etc.

Remedies for external use may also be in the form of bougies; one example of these is given among the following formulas.

Every patient suffering with gonorrhea should be advised to keep the bowels well open and also to refrain from the use of any stimulants during the course of the disease.

Gleet is simply a chronic form of gonorrhea.

I.

Potassium citrate	av.oz. 1
Syrup of citric acid.....	fl.oz. 2
Water, to make.....	fl.oz. 8

Gonorrhea Remedies (Cont'd).

This is to be taken only in the very first stages of the disease to render the urine alkaline. A tablespoonful is to be taken 3 times daily. If given early enough, it will effect a cure without further treatment.

Injections.**II.**

Berberine hydrochlorid.....	gr. 15
Zinc acetate	gr. 15
Glycerin	fl.dr. 4
Water, to make.....	fl.oz. 8

This is to be used as a urethral injection several times daily.

III.

Tincture of hydrastis.....	fl.dr. 4
Lime water, to make.....	fl.oz. 8
To be used like No. I.	

IV.

Zinc sulfate	gr. 10
Lead acetate	gr. 10
Comp. tincture of catechu...	fl.dr. 1
Tincture of opium.....	fl.dr. 3
Water, to make.....	fl.oz. 8
To be used like No. I.	

V. This has been called Bumsted's Gleet Cure.

Zinc sulfate	gr. 15
Extract of opium.....	gr. 8
Glycerite of hydrastis.....	fl.dr. 2
Glycerin	fl.oz. 1
Water, to make.....	fl.oz. 8
To be used like No. I.	

VI. The newer silver salts such as protargol and nargol are regarded with favor by physicians in the treatment of gonorrhea. Aqueous solutions containing $\frac{1}{4}$ to 1 per cent may be used for acute cases, while chronic cases may be treated with solutions containing 1 to 5 per cent. These compounds are easiest dissolved by triturating them in a mortar with a small amount of glycerin to a smooth paste, then adding the water.

These injections are to be used several times daily.

Pastes.**VII.**

Balsam of copaiba.....	fl.oz. 2
Glycerin	fl.dr. 3
Sugar, powder	av.oz. 2

Calcined magnesias	av.oz. 2
Licorice root, powder.....	av.oz. $1\frac{1}{2}$

Rub up the copaiba and glycerin intimately together, and then add the remaining ingredients gradually in the order named.

VIII.

Balsam of copaiba.....	av.oz. 4
Oil of sandalwood.....	fl.oz. 1
Gum turpentine	av.oz. 4
Cubeb, powder.....	sufficient

Melt the turpentine with the copaiba by the aid of gentle heat, add the oil and incorporate in the melted mass as much of the cubeb as will form a suitable paste.

Dose, size of a pea 3 or 4 times a day.

Pills or Capsules.**IX.**

Oil of sandalwood.....	gr. 300
Yellow wax	gr. 300

Melt the wax at the lowest possible temperature, add the oil, allow to cool, and divide into 100 pills or capsules.

One pill is to be taken every 3 hours.

Bougies.**X.**

Carbolic acid	drop 1
Iron persulfate, powder.....	gr. 4
Zinc acetate	gr. 10
Extract of hydrastis.....	gr. 30
Extract of belladonna.....	gr. 30
Cocoa butter, grated.....	sufficient

Convert this mixture into 30 bougies, each 2 inches long and about $\frac{1}{4}$ inch thick. These may be rolled out on a pill tile or pill machine. See Suppositories, Part I, for details as to method of making them.

These bougies may be advised for gonorrhea, gleet and spermatorrhea (nocturnal emissions).

One is to be inserted in the urethra at night.

Emulsion.**XI.**

Balsam of copaiba.....	fl.oz. 2
Oil of sandalwood.....	fl.dr. 4
Oil of wintergreen.....	fl.dr. 1
Acacia, powder	av.oz. 1
Simple syrup	fl.oz. 4
Water, to make.....	fl.oz. 16

Mix the balsam and two oils and trit-

urate this mixture intimately with the gum; then add all at once 2 fluidounces of water, triturate rapidly until an emulsion is formed, and add the remainder of the water and the syrup.

The dose is a teaspoonful every 3 or 4 hours.

Gout, Remedies for.

See under Rheumatism and Gout.

Hay Fever Remedies.

I.

Boric acidgr. 60
Sodium salicylategr. 75
Cocaine hydrochloridgr. 4

This powder is to be insufflated into the nostrils frequently during the day. For the eyes, where affected, a wash of zinc or copper sulfate should be used.

II.

Cocaine hydrochlorid.....gr. 6
Carbolic acidgr. 10
Mentholgr. 20
Sweet almond oil.....fl.dr. 2
Ointment of zinc oxid.....gr. 240

This is to be applied on a cotton pledget.

The cocaine makes the above two formulas dangerous without specific warning against the continued use of the preparations. Beta-eucaine may be substituted for the cocaine.

Topical applications like the above should be used in connection with tonics internally, such as elixir of iron, quinine and strychnine; a preparation containing arsenic is also excellent.

Headache Remedies.

Headache remedies are now quite numerous and almost every pharmacist prepares a remedy to replace the "patented" articles. These remedies are usually put up in the form of powders, capsules, wafers, pills and tablets, but the ingredients are practically alike. The common ingredients of these preparations are acetanilid, phenacetin, caffeine, bromids, sodium bicarbonate (to correct acidity of the stomach), etc.

Some of the headache remedies appear in the form of effervescent salts; the in-

gredients are, however, similar to those of the other remedies.

Headache powders (or pills, capsules or tablets) are usually directed to be taken 15 or 20 minutes apart, but owing to the presence of acetanilid in most of them it is not safe to take more than two doses. If two fail to cure the headache, some external application should be tried. The dose of the effervescent salts is a heaping teaspoonful in a third of a tumblerful of water.

I.

Acetanilidgr. 7
Sodium bicarbonate.....gr. 2
Caffeinegr. 1
Make one powder, pill, capsule or tablet.

II.

Phenacetingr. 10
Caffeinegr. 1
Make one powder, pill, capsule or tablet.

III.

Acetanilidav.oz. 1
Sodium salicylatedr. 2
Cerium oxalatedr. 1
Mix, make 10 gr. doses, and form into powders, pills, capsules, etc.

IV. Dr. C. L. Kerr's formula:

Acetanilidgr. 3
Ammonium chloridgr. 1
Citratd caffeinegr. ½
Sodium bicarbonategr. ½
Make one powder, pill, capsule or tablet.

V. Two excellent formulas from the U. S. P. and the old N. F. are in Part I under the name Compound Acetanilid Powder (see Powders).

VI. Effervescent Potassium Bromid with Caffeine, Part I, will also be found serviceable.

VII.

Caffeinegr. 80
Ammonium carbonategr. 80
Elixir of guarana, to make.fl.oz. 4
Mix and dissolve.

The dose is a teaspoonful every hour until relieved. This is suitable for neuralgic headaches.

Headache Remedies (Cont'd).

VIII. This is used in the Philadelphia Hospital.

Acetanilid	gr. 80
Alcohol	fl.oz. 1
Aromatic spirit of ammonia.....	fl.oz. 1
Compound tincture of car-	
damom	fl.oz. 1
Simple elixir, to make.....	fl.oz. 4

Dissolve the acetanilid in the alcohol and add the other ingredients.

The dose is a teaspoonful.

IX.

Oil of lavender flowers.....	fl.dr. 1
Camphor	av.oz. 1
Ammonia water	fl.oz. 4
Alcohol, to make.....	fl.oz. 16

Dissolve the camphor and oil in the alcohol and then add the water. This is for inhalation and application to the forehead.

Hives, Remedies for.

Hives, called urticaria in medical parlance, is an affection most common in summer time and is more common in children than in adults. It appears as large, reddened, elevated patches on the skin and itches intensely. It is caused by some gastro-intestinal derangement. Some persons cannot eat certain articles of food without getting an attack of hives.

The best internal treatment is full doses of sodium phosphate given several times daily to keep the bowels open. Externally apply some cooling lotion to relieve itching, such as a weak carbolic acid solution (1 dr. to 1 pint of water), an alkaline solution like sodium bicarbonate in water, menthol (5 or 10 grains to the ounce of solution or ointment), or vinegar or acetic acid (to contain about 4 or 5 per cent of acetic acid). Or use the following:

Sodium borate	av.oz. ½
Carbolic acid	fl.dr. 1
Glycerin	fl.dr. 2
Alcohol	fl.oz. 2
Water, to make.....	fl.oz. 16

This is to be applied frequently to the skin.

Insect Stings, Application for.

See Stings and Bites, Treatment for.

Itch, Remedies for.

The disease known as itch, or, more properly, scabies, is a very annoying and tolerably common complaint. It is a parasitic skin disease, caused by a minute insect called itch-mite or acarus, which burrows under the skin. The mode of treatment is practically the same as for the other skin diseases.

The remedies mentioned below are all to be applied several times daily.

I. Compound Sulfur Ointment (see formula in Part I under Ointments), also known as Wilkinson's Ointment or Hebra's Itch Ointment, is an excellent remedy for the itch.

II.

Red oxid of mercury.....	dr. 2
Burgundy pitch	dr. 2
Oil of turpentine.....	fl.dr. 2
Lard	av.oz. 4
Suet	av.oz. 4

Melt the pitch, add the suet and lard, mix well, allow to cool, add the oil, and then incorporate thoroughly with the mercury oxid.

III.

Menthol	gr. 100
Peru balsam	gr. 200
Lanolin	av.oz. 9

Dissolve the menthol in the lanolin melted at a very gentle heat and incorporate the balsam with this solution.

Kidney Remedies.

Some years ago preparations for the kidneys were marketed under the name of Buchus; there have also been Diuretic Elixirs, and now these preparations are usually termed Kidney and Liver Remedies. The latter are therefore to be recommended for affections of the liver, kidney and urinary organs. Many of the remedies for liver complaints may consequently be recommended for kidney affections and conversely many remedies for the kidney may be recommended for the liver.

Kidney remedies need not necessarily be of the liquid form; they may be in the form of coarse powder or species which should be infused with water be-

fore using. Kidney remedies in pill form are now popular.

Liquids.

The dose of these preparations is a tablespoonful 3 times a day.

I. Formula of the Illinois Pharmaceutical Association:

Liverwort	av.oz. 4
Hydrangea	av.oz. 4
Broom tops	av.oz. 4
Canadian hemp (apocyn- um)	av.oz. 4
Couch grass	av.oz. 4
Potassium nitrate	av.oz. 3
Alcohol	fl.oz. 12
Syrupy glucose	fl.oz. 12
Water, to make.....	fl.oz. 64

Infuse the drugs with hot water so as to make 40 fluidounces of product, and to this add the alcohol and glucose.

Fluid extracts may be substituted for the drugs, in which case the alcohol should be omitted.

II.

Liverwort	av.oz. 2
Couch grass	av.oz. 2
Wintergreen	av.oz. 1
Jamaica dogwood	av.oz. $\frac{1}{2}$
Potassium nitrate	av.oz. $\frac{1}{2}$
Alcohol	fl.oz. 16
Glycerin	fl.oz. 6
Water, diluted alcohol, to make	fl.oz. 64

Grind the drugs to coarse powder, percolate with all the glycerin and alcohol mixed with 16 fluidounces of water. When that has all passed add enough diluted alcohol to make 64 fluidounces and in this dissolve the potassium nitrate.

Teas.

A teaspoonful is to be steeped for a few minutes in hot water and drank 3 times a day.

III.

Buchu	av.oz. 8
Uva ursi	av.oz. 8
Juniper berries	av.oz. 4
Make into coarse powder.	

IV.

Chicory	av.oz. 9
Couch grass	av.oz. 2
Senna	av.oz. 2
Bittersweet	av.oz. 2
Red clover	av.oz. 1

All the drugs should be cut tolerably fine and be well mixed.

Pills.

V.

Extract of asparagus.....	gr. 1/5
Extract of buchu.....	gr. 1/6
Extract of uva ursi.....	gr. 1/6
Extract of pareira brava....	gr. 1/16
Oil of juniper.....	m. 1/6
Oleoresin of cubeb.....	m. 1/12

The dose is one or two pills 3 times daily.

Lice, Application for.

Pharmacists are frequently called upon to recommend something for lousiness (pediculosis is the medical term). Head lice are most frequent in children, body and crab lice in adults, but the method of treatment is the same. Mercurial ointment is a favorite application, but is objectionable on account of its greasiness. Insect powder, powdered sabadilla seed, powdered sulfur, sulfur ointment, and solution of carbolic acid are also used. To remove the "nits," dilute acetic acid, dilute alcohol, or mild alkaline solutions should be frequently used. These may be combined with parasitocides as in the following:

I.

Fluid ext. of stavesacre....	fl.oz. 1
Diluted acetic acid.....	fl.oz. 15
Mix and filter.	

II.

Stavesacre seed, powder....	av.oz. 4
Oil of lemon.....	drops 20
Oil of lavender flowers....	drops 10
Oil of rose geranium.....	drops 10
Tincture of cudbear.....	fl.dr. 4
Acetic acid	fl.oz. 2
Water, to make.....	fl.oz. 32
Alcohol	fl.oz. 8

Mix the powder, acid and 24 fluidounces of water, boil gently for 10 minutes, and allow to cool. Dissolve the oils and tincture in the alcohol, add this to the decoction, stir well, let stand a few hours, strain with expression, add enough water through the strainer to make 32 fluidounces of liquid and finally filter.

These preparations are to be applied twice daily.

Liniments.

Liniments are in considerable demand and every pharmacist should have such a preparation ready to offer for sale. Some of these liniments may also be taken internally for cramps, cholera, diarrhea, etc., and these may be known by such titles as Pain Cure, Pain Dispeller, Pain Relief, Rapid Relief, etc. Other names which may be employed are Stimulant Liniment, Electric Liniment, Kerosene Liniment, Embrocation, Nerve and Bone Liniment, Arnica Liniment, Rheumatic Oil, Rheumatic Liniment, Universal Liniment, Rocky Mountain Liniment, Family Liniment, Magic Liniment, Home Liniment, Penetrating Liniment, Red Oil, Indian Liniment, Wizard Liniment, Wizard Balm, Golden Oil, Knickerbocker Liniment, Bicycle Liniment, etc. If it be white, it might be known as White Liniment or Cream Liniment. The word "oil" is rather more popular as a name for an external application than the word "liniment."

These liniments are recommended for rheumatism, neuralgia, bruises, chilblains, frost bites, sprains, stings and bites of insects, lameness, etc. Many of the preparations may also be employed for veterinary purposes.

Kerosene Liniment.**I.**

Capsicum, powder	gr. 60
Fusel oil	fl.dr. 4
Oil of organum	fl.dr. 4
Oil of sassafras	fl.oz. 1
Oil of turpentine	fl.oz. 8
Kerosene oil	fl.oz. 38

Mix the whole, macerate for 24 hours and strain through muslin.

II

Castile soap, powder	av. oz. 4
Oil of camphor	fl.oz. 2
Tincture of arnica	fl.oz. 16
Distilled extract of witch-hazel	fl.oz. 16
Alcohol	fl.oz. 24
Water	fl.oz. 8

Mix the soap, alcohol and oil, shake well, add the other ingredients, let stand for several days, shaking occasionally, and filter.

Witchhazel Liniment.**III**

Camphor	av.oz. 2
Ammonia water	fl.oz. 5
Tincture of capsicum	fl.oz. 5
Distilled extract of witch-hazel	fl.oz. 10
Alcohol	fl.oz. 34
Color with caramel.	

Dissolve the camphor in the alcohol and add the other ingredients.

Spirit of ammonia in the above will make a better mixture than ammonia water.

Lightning Iodin Liniment or Liniment of Ammonium Iodid.**IV**

Iodin	gr. 280
Oil of rosemary	fl.dr. 10
Camphor gum	av.oz. 4
Tincture of opium	fl.oz. 5
Chloroform	fl.oz. 6
Alcohol	fl.oz. 40
Ammonia water, to make	fl.oz. 64

Dissolve the iodine, oil and camphor in the alcohol and chloroform, and add the other ingredients.

This should be put up in amber-colored, rubber-stoppered vials.

This is similar to Liniment of Ammonium Iodid in Part I, which see.

The following has been called

"Nerve and Bone Liniment."**V.**

Oil of organum	fl.oz. 1
Oil of rosemary	fl.oz. 1
Oil of amber	fl.oz. 1
Oil of hemlock	fl.oz. 1
Oil of turpentine	fl.oz. 32
Linseed oil	fl.oz. 16
Color with alkanet.	

Mustard Liniment.**VI**

Oil of mustard	fl.dr. 2
Oil of turpentine	fl.dr. 2
Chloroform	fl.dr. 2
Alcohol, to make	fl.oz. 16

Neuralgia Liniment.**VII**

Menthol	dr. 2
Gum Camphor	dr. 2
Oil of sassafras	fl.dr. 2
Ether	fl.dr. 4
Chloroform	fl.dr. 4
Alcohol, to make	fl.oz. 8

Apply to parts affected and cover for a few minutes with a woollen cloth.

Liniment Containing Egg.

VIII

Castile soap, powder.....av.oz.	2
Oil of origanum.....fl.oz.	2
Oil of turpentine.....fl.oz.	2
Camphorated oil.....fl.oz.	2
Ammonia water.....fl.oz.	8
Yolks of 4 eggs.	
Mix well.	

This is a formula for the preparation known as White Oils.

IX. Acetic Turpentine Liniment, also called Stokes' or St. John Long's Liniment (see formula in Part I under Liniments) is another external application containing egg.

Fluid Lightning.

X.

The following is similar to certain preparations known by the term Fluid Lightning:

Aconitine.....gr.	2
Oil of mustard.....fl.dr.	2
Chloroform.....fl.dr.	2
Ether, stronger.....fl.oz.	1
Alcohol, to make.....fl.oz.	12

The above is a valuable external application for headache, rheumatism, neuralgia, and all nervous pains.

Miscellaneous Liniments.

XI.

Oil of camphor.....fl.oz.	8
Oil of turpentine.....fl.oz.	40
Benzine, deodorized.....fl.oz.	16
Cottonseed oil.....fl.oz.	16
Capsicum, powder.....av.oz.	1

Macerate the capsicum with the benzine for 3 days, agitating frequently, and strain. Mix the oils of camphor, turpentine and cottonseed and add the previous liquid.

XII.

Tincture of cantharides....fl.oz.	3
Tincture of myrrh.....fl.oz.	4
Tincture of guaiac.....fl.oz.	1
Oil of hemlock.....fl.oz.	2
Oil of turpentine.....fl.oz.	8
Oil of camphor.....fl.oz.	16
Cottonseed oil.....fl.oz.	32
Water of ammonia, strong..fl.oz.	4
Solution of potassa.....fl.oz.	1

XIII.

Any of the liniments mentioned in Part I may also be used.

Pain Relief.

(For internal and external use.)

The preparations under this heading may be used externally like the preceding liniments and also internally as quick stimulants and pain relievers in cases of cholera, colic, cramps, colds, etc. The dose is one-half to one teaspoonful in some hot water every hour or so. At the same time the preparation may be applied externally.

XIV.

Tincture of guaiac.....fl.oz.	2
Tincture of myrrh.....fl.oz.	2
Tincture of capsicum.....fl.oz.	4
Spirit of camphor.....fl.oz.	8
Alcohol.....fl.oz.	16

XV.

Oil of cinnamon.....fl.dr.	2
Oil of clove.....fl.dr.	4
Oil of turpentine.....fl.oz.	1½
Oil of sassafras.....fl.dr.	2
Ammonia water.....fl.dr.	2
Chloroform.....fl.oz.	1
Alcohol, to make.....fl.oz.	32

Liver Medicines.

Medicines for the liver are usually termed Liver Invigorators or Liver Regulators, very frequently Kidney and Liver Remedies; in fact most medicines for liver complaints are also recommended for derangements of the kidneys. Some of the liver medicines assume the liquid form, some are in the form of species, some in pill form, etc. In addition to the formulas here mentioned, some of the blood purifiers, "bit-ters," cathartics, and kidney remedies may be recommended for assisting the liver in its functions.

Liquids.

I.

Fluid extract of rhubarb...fl.oz.	2
Fluid extract of leptandra..fl.oz.	2
Fluid ext. of mandrake....fl.oz.	2
Compound tincture of carda- mom.....fl.oz.	4
Comp. tincture of gentian...fl.oz.	8
Tincture of ginger.....fl.oz.	2
Simple elixir.....fl.oz.	12

The dose is one or two teaspoonfuls 3 times a day.

Liver Medicines (Cont'd).**II.**

Fluid ext. of leptandra.....	f.oz.	1
Fluid ext. of mandrake.....	f.oz.	1
Fluid ext. of serpentaria....	f.oz.	2
Fluid extract of senna.....	f.oz.	5
Diluted alcohol, to make....	f.oz.	32

This is to be used like the preceding.

Teas.**III.**

Leptandra	av.oz.	2
Serpentaria	av.oz.	2
Liverwort	av.oz.	2
Senna	av.oz.	2
Butternut	av.oz.	2
Licorice root	av.oz.	1
Anise	av.oz.	1

Mix and reduce to coarse powder.

The dose is a teaspoonful steeped in hot water and strained, taken 3 times daily.

IV.

Senna	av.oz.	8
Serpentaria	av.oz.	4
Star grass	av.oz.	2
Golden seal	av.oz.	1

Make into a coarse powder.

Use like the preceding.

Pills or Capsules.**V.**

Resin of scammony.....	gr.	20
Socotrine aloes	gr.	20
Blue mass	gr.	20
Oil of anise.....	m.	5

Make into a mass and divide into 20 pills or capsules.

The dose is one or two pills at night.

The pills mentioned under Cathartics are also to be recommended as "liver pills."

Moles, to Remove.

Tartar emetic, fine powder....	dr.	1
Venice turpentine	dr.	1
Soap plaster	dr.	3

Mix intimately, and spread upon adhesive plaster. Apply firmly to the surface of the mole, and remove when supuration sets in.

Nervous Debility, Remedies for.

Of late it has become quite the fashion for the public in general to believe they are suffering from nervous disorders, and many so-called "nervines" have appeared upon the market. Some of these

contain celery, others phosphorous and damiana, the latter also frequently containing kola, nux vomica, gentian, cinchona, or columbo.

These preparations may, according to their form or composition, be known as Celery Compound, Celery Nervine, Celery Tonic, Celery and Kola, Celery, Cordial, Nerve Tonic, Vitalizer, Vitalizing Tonic, Damiana Compound, Nervous Debility Pills, Aphrodisiac Pills, Compound Damiana Pills, etc.

Liquids Containing Celery.

Most of the preparations mentioned under this heading are excellent tonics; the celery is added merely in deference to popular notion. Only one contains kola, but a small amount, about 4 ounces to the gallon, may be added if desired; the preparation may then be known as "celery and kola" or "celery and kola nerve tonic." The dose of these preparations is one or two teaspoonfuls after each meal.

I.

Celery seed	av.oz.	8
Red cinchona	av.oz.	4
Orange peel (sweet or bitter)	av.oz.	1
Coriander seed	av.oz.	1
Lemon peel	av.oz.	1
Muriatic acid	f.dr.	1
Alcohol	f.oz.	20
Glycerin	f.oz.	16
Water	f.oz.	16
Simple syrup	f.oz.	16
Diluted alcohol, to make....	f.oz.	64

Mix all the drugs and grind to a moderately coarse powder. Mix the acid, alcohol, glycerin and water; percolate the drug with this mixture, adding enough diluted alcohol to make 48 fluid-ounces. Add the syrup and if necessary filter.

II.

Celery seed	av.oz.	4
Coca leaves	av.oz.	4
Black haw	av.oz.	4
Mandrake	av.oz.	2
Orange peel (sweet or bitter)	av.oz.	1
Sugar	av.oz.	16
Diluted alcohol, to make....	f.oz.	24

Mix the drugs, reduce them to coarse

powder, and extract in the usual way by percolation with diluted alcohol to obtain 54 fluidounces of percolate; in this dissolve the sugar by agitation and strain.

III.

Compound Elixir of Celery is also an excellent preparation of this kind. See formula in Volume I under Elixirs.

Liquids Containing Damiana.

These are also tonics like the preceding, and the damiana is added also in deference to popular notion; its value is problematical.

IV.

Potassim hypophosphite ...av.oz.	1
Fluid ext. of nux vomica...fl.dr.	2
Fluid ext. of damiana.....fl.oz.	4
Fluid extract of coca.....fl.oz.	4
Diluted hydrobromic acid...fl.oz.	4
Water	4
Simple elixir, to make.....fl.oz.	64

Dissolve the hypophosphite in the water, add the other ingredients, and filter.

The dose is one-half to one tablespoonful 3 times a day before meals.

Damiana	av.oz. 8
Gentian	av.oz. 8
Columbo	av.oz. 8
Nux vomica	av.oz. 3
Phosphoric acid	fl.oz. 2
Alcohol, water, each.....	sufficient

Mix the drugs in ground form, percolate with a mixture of 1 volume of alcohol and 3 of water so as to obtain 62 fluid ounces of percolate and to this add the acid.

The dose is one or two teaspoonfuls after each meal.

Neuralgia Remedies.

Neuralgia may be treated externally or internally or both. Very often one of the headache remedies will afford relief (see formulas under Headache Remedies). Or a neuralgia pill may be used (see formulas for Gross's and Brown-Sequard's pills under Pills in Part I). Very frequently an external application will afford relief such as Neuralgia Liniment mentioned under Liniments in this part or the ointment (No. III) mentioned under Rheuma-

tism and Gout Remedies, or Liniment of Aconite and Chloroform in Part I. under Liniments. The preparations mentioned under Rheumatism and Gout Remedies will often give relief in neuralgia. Other preparations to use are the following:

I.

Menthol	gr. 45
Cocaine, muriate	gr. 15
Chloral, hydrate	gr. 10
Petrolatum	gr. 300

Apply to painful part, covering with muslin afterwards.

II.

Oil of peppermint	fl.oz. 1
Chloroform	fl.oz. 2
Tincture of aconite.....	fl.oz. 4

Apply every half hour or every hour.

III.

When the neuralgia is due to rheumatism or gout, the following is useful:

Antipyrin	dr. 2
Sodium salicylate	dr. 4
Aromatic spirit of ammonia..	fl.oz. 1
Simple elixir, to make.....	fl.oz. 6

The dose is a dessertspoonful every 2 to 4 hours.

Nipples, for Fissured.—(Mammillary Lotions, Ointments, etc.)

These preparations are to be applied after each nursing, and the nipples are to be cleansed carefully before the next nursing.

I.

Ichtyol	gr. 120
Lanolin	gr. 180
Glycerin	fl.dr. 3
Olive oil	fl.dr. 1

II.

Salicylic acid	gr. 30
Tannic acid	gr. 8
Borax	dr. 1
White wax.....	dr. 2
Lard, benzoinated.....	dr. 6

III.

Salol	gr. 60
Cocaine hydrochlorid.....	gr. 2
Ether	fl.dr. 1
Collodion	fl.dr. 7

This is to be painted on with a camel's hair pencil.

IV.

To prevent fissuring of the nipples,

Mamillary Lotions (Cont'd).

apply lanolin with the onset of labor four times daily till lactation is established. The nipples are then, after each nursing, to be anointed with the following:

Compound tincture of benzoin	drops	15
Olive oil	fl.dr.	2
Lanolin	dr.	6

Pile Remedies.

Piles, or hemorrhoids, as they are more correctly termed, are a very common and very annoying affection. They are termed "internal" piles when they exist within the sphincter controlling the muscles of the anus, and "external" piles when existing outside of this sphincter. Other terms also are used in describing them: Blind piles which are simply a varicose state of the veins without bleeding; itching piles, which are accompanied by itching; bleeding piles, which are accompanied by loss of blood at every evacuation; and mucous piles, when pus or mucus only is discharged.

Treatment of piles should be both constitutional and local. The constitutional treatment should consist of the taking of compound licorice powder or one of the "bitter waters" at night. For local treatment, a mixture of an astringent like nutgall, tannin, extract of witchhazel, extract of rhatany, lead acetate or iron subsulfate, with an anodyne like opium, belladonna, conium, tobacco, stramonium, ergot, or morphine is considered advisable. Other agents sometimes added to this mixture are antiseptics like iodoform, tar, peru balsam, carbolic acid, betanaphthol or salol. This mixture may assume the form of an ointment or of suppositories. The former should be preferred for external, the latter for internal, piles. When the piles are only tolerably severe, these remedies afford prompt relief, but when quite severe, only surgical intervention will effect a cure.

Ointments.

These ointments are to be applied about twice daily. In cases of itching or external piles, they are to be applied with the finger, but in bleeding and ulcerated piles the remedy should be pushed up into the rectum. This may also be done by means of the finger but the best way is by the use of a pile pipe.

I.

Ointment of Gall and Opium in Part I (see formula under Ointments) is an excellent ointment for piles.

II.

Fluid extract of witchhazel	fl.oz.	1
Peru balsam	gr.	120
Fenugreek	av.oz.	1
Petrolatum	av.oz.	16
Paraffin	av.oz.	4

Melt the petrolatum with gentle heat and macerate therein the fenugreek, for half an hour; then add the paraffin and strain through cloth. When about to solidify, add the extract of witchhazel to which the balsam has been added, stir until cool.

III.

Morphine sulfate	gr.	8
Olive oil	fl.oz.	1
Ointment of zinc oxid.	av.oz.	4
Nutgall, fine powder	av.oz.	1

Suppositories.

These are to be preferred for internal piles. One should be inserted each night and in the morning also if possible.

IV.

Extract of witchhazel	gr.	60
Tannia	gr.	12
Opium powder	gr.	4
Cocoa butter	gr.	180

Make into 12 suppositories.

V.

Iodoform	gr.	30
Extract of belladonna	gr.	3
Morphine sulfate	gr.	1½
Cocoa butter	gr.	180

Make into 12 suppositories.

Prickly Heat, Remedies for.

"Prickly heat" is of course an affection of the summer season. Treatment

should consist in removing unnecessary clothing, keeping in a cool place and avoiding violent exercise. Food should be easily digestible and non-stimulating. Drinks should also be unstimulating—alcoholic drinks should sedulously be avoided—and should be cool but not ice-cold as the latter excites perspiration. If there is constipation a saline laxative like rochelle or epsom salt or solution of magnesium citrate should be given. Local applications may consist of borated talcum, salicylated powder of talcum (see formula under Feet, Preparations for the), aqueous solution of sodium bicarbonate, borax or boric acid, or a solution of copper sulfate (10 grains to the ounce), preferably with a little carbonic acid will be found highly efficacious. The following has also been recommended:

Carbolic acid	m. 30 to 60
Boric acid	dr. 4
Glycerin	fl.dr. 1
Alcohol	fl.oz. 2
Water	fl.oz. 12

Rheumatism and Gout.

Rheumatism may consist of remedies for internal or for external use. Those for internal use are to be preferred as affording better results, but the effects are still more marked if accompanied by the use of a suitable application (liniment).

Rheumatism remedies are usually also recommended for gout. The remedies for the external treatment of gout may consist of liniments or ointments; an example of a suitable gout ointment is mentioned below. See also Liniments for suitable external applications.

Internal Remedies.

I.

Sodium salicylate	av.oz. 3
Potassium acetate	av.oz. 2
Fluid extract of colchicum seed	fl.dr. 6
Fluid extract of black cohosh	fl.oz. 2
Oil of wintergreen	m. 20
Alcohol	fl.dr. 2
Simple syrup	fl.oz. 4
Water, to make	fl.oz. 24

Dissolve the oil in the alcohol, add the fluid extracts, then the other ingredients, and dissolve by agitation.

The dose is a teaspoonful every 3 hours.

II.

Sodium salicylate	av.oz. 2
Potassium iodid	av.oz. 2
Potassium acetate	av.oz. 2
Fluid ext. cascara sagrada	fl.oz. 4
Glycerin	fl.oz. 4
Peppermint water, to make	fl.oz. 24

The dose is a teaspoonful every 3 hours.

External Application.

III.

Menthol	gr. 80
Salicylic acid	dr. 2
Camphor-chloral	dr. 4
Capsicum powder	dr. 4
Oil of mustard	drops 30
Wool fat, hydrous	av. oz. 2
Petrolatum, to make	av.oz. 4

This is to be applied with vigorous friction 3 times a day.

IV. Many of the liniments may be employed externally for the relief of rheumatic pains; some of the "blood purifiers" and possibly some of the "biters" may be recommended for the cure of rheumatism.

Ringworm Applications.

This is a skin disease caused by infection with a vegetable parasite. This attacks the epidermis, the hair and hair follicle. Its characteristic feature is the circular patches which gradually increase in size. Any parasiticide remedies will cure the disease. These preparations should be rubbed in well several times a day.

I.

Iodin	dr. 2
Potassium iodid	dr. 1
Alcohol	fl.dr. 6
Water, to make	fl.oz. 2

II.

Precipitated sulphur	dr. 1
Ammoniated mercury	dr. 1
Salicylic acid	gr. 40
Wool fat, hydrous	av.oz. 1
Petrolatum	av.oz. 1

Ringworm (Cont'd).**III.**

Unn's compound chrysarobin ointment:

Chrysarobin	gr. 160
Ichthyol	gr. 100
Salicylic acid	gr. 60
Petrolatum	av.oz. 2

Salves or Ointments.

The ointments mentioned below are useful applications for cuts, burns, ulcers, bruises, bites and stings of insects, frost bites, chilblains, bed sores, etc. Appropriate titles for these preparations are Household Salve, Healing Salve (or Ointment), Carbolic Salve, Family Salve, Carbolyzed Ointment, Witchhazel Salve, etc.

Other ointments useful for skin diseases may be found under the head of Remedies for Barber's Itch, Itch Remedies, Eczema Remedies, and Ringworm Applications.

Carbolic Salves.**I.**

Carbolic acid, crystal.....oz.	1/2
White wax	av.oz. 2
Petrolatum	av.oz. 16

Melt the wax and petrolatum; remove from the fire and while cooling stir in the acid.

II.

Petrolatum	av.oz. 16
Yellow wax	av.oz. 1 1/2
Camphor	av.oz. 1
Carbolic acid, crystal.....oz.	1/2
Oil of sassafras.. ..	drops 30

Melt the carbolic acid and while warm add the camphor and oil of sassafras. Melt the wax and add to it the petrolatum, melting them together; while cooling but still liquid add the solution of camphor in carbolic acid and oil and stir occasionally while cooling.

The caustic properties of the carbolic acid are neutralized in this preparation by the camphor.

Arnica Salve.**III.**

Solid extract of arnica.....dr.	2
Lard	av.oz. 14 1/2
Yellow wax	av.oz. 1 1/2
Hot water	sufficient

Dissolve the extract of arnica in the hot water, and thoroughly incorporate it with the lard and beeswax previously melted together.

Witchhazel Salve.**IV.**

Fluid ext. witchhazel.....fl.oz.	2
Wool-fat	av.oz. 4
Petrolatum	av.oz. 16

Triturate the fluid extract with the wool-fat until well mixed, then incorporate with the petrolatum.

Healing or Family Salves.**V.**

Tannin	dr. 2
Oil of sassafras	fl.dr. 2
Venice turpentine	av.oz. 2
Zinc oxid	av.oz. 4
Yellow wax	av.oz. 4
Resin	av.oz. 4
Lard	av.oz. 16

Melt the wax and resin, add the lard and turpentine, and while cooling, incorporate the other ingredients, taking care to make a perfectly smooth mixture.

VI.

Camphor gum	av.oz. 1
Zinc oxid.....	av.oz. 8
Paraffin wax	av.oz. 4
Petrolatum	av.oz. 40

Melt the paraffin, add the petrolatum, and, in this mixture, while still warm, dissolve the camphor; then thoroughly incorporate the zinc oxid.

Stick Salve.**VII.**

The so-called "stick salves" are solid preparations in the form of round sticks which soften upon the application of heat. They are recommended for burns, scalds, chilblains, frost-bites, boils, wounds, corns, ulcers, all kinds of sores and many other complaints. In using the salve cut into thin pieces and spread upon cloth or leather with a warm knife; or the end of the stick may be softened by warming over a lighted gas jet or a warm stove and then spread upon cloth or leather. Most of these "sticks" contain burgundy pitch, like the following:

Burgundy pitch	av.oz. 6
----------------------	----------

Resin	av.oz. 4
Gum turpentine	av.oz. 2
Yellow wax	av.oz. 2
Balsam of fir.....	av.oz. 2
Venice turpentine	av.oz. 1

Melt the pitch, resin and wax together, then incorporate, strain when all are melted, and form into sticks.

Soothing (Teething) Remedies.

These preparations usually have a title like Baby Soothing Syrup, Anise Soothing Drops, Infant Teething Syrup, Baby Soother, Teething Powders, etc. Most of the proprietary preparations of this kind depend for their "soothing" effect upon opium; others are simply carminative in cases of infantile colic, depending for their value upon anise, sometimes combined with fennel, ginger, lactucarium, lupulin, etc. The latter two have been credited with sedative (soothing) properties. Inasmuch as the effects of opium are so pernicious, especially upon infants, it is best to refrain from giving formulas containing this agent or its chief alkaloid. There is also the disadvantage with the use of opium, that it obscures the real difficulty; the infant may be suffering from a vital or dangerous disease which will result fatally if not properly treated by a competent physician.

Liquids.

The dose of these preparations is one-fourth to one teaspoonful according to the age of the child.

I.

Anise	av.oz. 1½
Fennel	av.oz. ½
Caraway	av.oz. ½
Lupulin	dr. 2
Ginger	gr. 30
Lactucarium	gr. 30
Diluted alcohol.....	sufficient
Simple syrup	fl.oz. 20

Mix the drugs, reduce to coarse powder, percolate with diluted alcohol so as to obtain 12 fluidounces of product and to this add the syrup.

II.

Anise	av.oz. 1¼
Fennel	av.oz. ½

Hops	gr. 120
Lactucarium	gr. 30
Diluted alcohol	fl.oz. 12
Simple syrup, to make.....	fl.oz. 32

Mix the drugs, reduce to coarse powder, percolate with the diluted alcohol, and add the syrup.

Powders.

One powder is to be given to a child 6 months old; half a powder to a younger child.

III.

Make powders each containing

Pepsin, saccharated	gr. 5
Magnesium carbonate	gr. 1
Charcoal	gr. ¼
Lactucarium	gr. 1/6

IV.

Make powders each containing

Mercury with chalk.....	gr. ½
Magnesium carbonate, heavy...	gr. 2
Rhubarb, powder	gr. 2
Sugar, powder	gr. 2

Tablets.

V.

Make tablets each containing:

Oil of anise	m. 1/134
Ipecac, powder	gr. 1/134
Nickel bromid	br. 1/134
Codeine sulfate	gr. 1/67
Lithium carbonate	gr. 1/25

Give one every 5 to 10 minutes as may be required, breaking the tablet into the child's mouth.

Stings and Bites, Treatment for.

Dog Bites.

The bite of a dog is often dreaded on account of the possible danger of rabies. This fear is usually ungrounded, but nevertheless the wound should be cleansed, first with soap and water, then with antiseptics, such as carbolic acid water, dilute solution of mercuric chlorid or solution of potassium permanganate. During this cleansing operation, the wound should be exposed as much as possible. If there is any suspicion that the animal is rabid, the wound should be cauterized. The animal should not be killed, but should be closely confined and be watched to see if it develops symptoms of rabies. If this occurs and

Stings and Bites (Cont'd).

it should show within ten days or there is other proof of hydrophobia, the patient should be sent to a Pasteur institute.

Insect Stings.

The stings of mosquitoes, wasps, bees, spiders and other insects are common in summer time. Apply ammonia water, spirit of camphor, or lead water and opium. Camphorated chloral will usually stop the pain. The following, if applied at once, will often prevent inflammation:

Salicylic acidgr. 48
Flexible collodionfl.oz. 1

Ichthyol is also an excellent remedy. It may be added to the above collodion mixture, or used in the form of lotion or ointment, or in the following:

Ichthyolfl.dr. 4
Ammonia waterfl.dr. 4
Camphor waterfl.oz. 4

Apply frequently to the inflammation.

This is also highly recommended:

Olive oilfl.oz. 1
Ammonia waterfl.oz. 1
Oil of turpentine.....m. 30
Tincture of opium.....m. 30

Sunstroke or Heat-Stroke.

There are two forms of sunstroke (properly called heat-stroke or insolation), one a mild form called heat exhaustion, the other being true sunstroke or thermic fever. Sunstroke may not necessarily be caused by direct exposure to the rays of the sun, but may be due to high atmospheric or artificial temperature, especially if this be aggravated by much humidity. Stokers, glass-blowers, bakers, etc., often suffer from it. Predisposing causes are ill-health, debility, fatigue, lack of drinking water, intemperance, improper food, excitement or a previous attack of sunstroke.

Heat exhaustion is a mild form of the attack and is not necessarily caused by exposure to the sun. The skin is pale, cold and clammy, the pulse is feeble, and the respiration shallow. While death sometimes results, the patients usually will recover under good treatment. The

affected person should be removed to a shady spot and laid on his back, his head should be lowered, his clothes loosened, and cool water lightly sprinkled on his head and chest. Ammonia should be applied to the nostrils and small quantities of stimulants, such as whisky, brandy, aromatic spirit of ammonia, nitroglycerin, strychnine, etc., should be administered.

True sunstroke or heatstroke (thermic fever) is the serious form of this complaint and may be caused by direct exposure to the sun's rays or to a high artificial temperature. The face becomes purple, the eyes bloodshot, and the veins swollen and corded; the skin is dry and burning, hot to the touch, and the respiration is rapid and stertorous. Delirium is common and the temperature is usually very high, reaching from 105 to 115 deg. F. The danger to the patient is great, death occurring in from 15 to 50 per cent of the cases affected, while those whose lives are saved are with rare exceptions ever afterwards invalids with impaired brain power.

While waiting the arrival of a physician, the stricken person should be removed to a cool, shady place, laid on the floor or ground, his clothing loosened and ice or ice-water applied, particularly to his head, back of his neck and spinal column. Rubbing the extremities with alcohol and applying mustard poultices to the feet are also recommended. When the temperature of the patient drops to 102 deg. F. (taken by the rectum), he should be rubbed dry, placed in bed, lightly covered, with ice to the head. Excessive dropping of the temperature (collapse or below normal) should be carefully watched for, in which event proper stimulants should be used and applications of hot water bags made to the body.

Symptoms of threatened heatstrokes may appear hours or even days before the attack. There is frequently more or less depression, uneasiness or irritability. The respiration may be hurried and the

skin hot and feverish, there is great thirst, headache and dizziness are common, and the sight is affected, sometimes a mere intolerance of light, but often everything seems of a purplish or reddish color. Later there is a sinking sensation at the pit of the stomach, sometimes nausea and vomiting and a sense of tightness around the chest.

As long as perspiration is free, it is possible to bear a high degree of heat, as the evaporation of the excretion from the surface of the body tends to cool the person. But in very humid weather, both perspiration and evaporation are checked, and if the atmospheric temperature reaches or even approaches 98½ deg. F. there is grave danger of numerous cases of heatstroke. It is at such times that people, especially those not in robust health, should exercise the greatest care about exposure, over-exertion, manner of dressing, eating and drinking; above all they should avoid alcoholics in any form and everything tending toward depressing physical energy. The food should be light, but nutritious, and meats, fats and heavy pastries should be eschewed. Overloading the stomach with food and drink, especially iced liquids, is harmful. A sponge bath morning and night is better than a prolonged cold bath, and this applies particularly to infants and children. Confinement in close rooms is depressing, and if this be unavoidable the rooms, working, living and sleeping rooms, should be well ventilated. The clothing should not be unnecessarily heavy; the hat especially should be light and well-ventilated.

Syphilis Remedies.

The recommending of remedies for the use of syphilitics does not come within the province of the pharmacist. The formula below, known as Hot Springs Prescription, is given merely because of its more or less extended use. Other remedies which may prove useful

are the "blood purifiers" containing potassium iodid.

Iodine	gr. 2
Mercuric chlorid	gr. 3
Potassium iodid	gr. 480
Comp. tincture of gentian.	fl.oz. 2
Fluid extract of senna.	fl.oz. 1
Compound syrup of sarsaparilla	fl.oz. 8
Water, to make.....	fl.oz. 16
Mix and dissolve.	

Tape-Worm Remedies.

See under Vermifuges.

Throat Affection, For.

Under this heading are classed such preparations as could not conveniently be placed under the Cough and Cold Remedies. These include tablets or lozenges and gargles. The former may be called Bronchial Lozenges (or Troches or Tablets), Throat Troches, Voice Lozenges, etc.

Troches.

I.

Morphine sulfate	gr. 10
Ipecac	gr. 40
Ginger	gr. 40
Tartaric acid	gr. 30
Oil of anise.....	gr. 20
Sugar	av.oz. 16

Mix all the dry ingredients, which should be in very fine powder, add the oil, mix again, pass through a fine sieve, and convert into a lozenge mass by adding a small amount of mucilage of acacia or of gum tragacanth, and then sufficient water. Roll the mass out and divide into lozenges of suitable size, spread these out on boards or trays in a warm place and when nearly dry turn them over and allow them to dry on the other side.

II.

Cubeb	gr. 140
Potassium chlorate	gr. 280
Extract of licorice.....	gr. 150
Pine tar	gr. 20
Sugar	av.oz. 16

Mix the cubeb, potassium chlorate, extract and sugar, all in fine powder; then incorporate the tar, make into a mass like the preceding, divide into lozenges and dry as before.

Throat Affections (Cont'd).

These lozenges have enjoyed some reputation under the name of Pine Tree Tar Lozenges. The licorice, cubeb and tar act as an expectorant and the potassium chlorate is intended to relieve soreness of the throat.

III.

Fluid extract pellitory.....m.	2/3
Pilocarpine hydrochlorid...gr.	1/100
Extract of licorice.....gr.	2
Glycerin	m. 1
Sugar, to make.....gr.	20

This is sufficient for one lozenge, which should be prepared like the preceding.

These lozenges give great relief from the uncomfortable sensations of heat and dryness which characterize many acute and chronic affections of the mucous membrane of the mouth and throat. The lozenge should be allowed to dissolve in the mouth, and one used every two, three or four hours as necessary. The addition of 2 grains of ammonium chlorid will often be beneficial in sub-acute inflammatory conditions of the mucous lining of the respiratory tract, while in more chronic affections 2 or 3 minims of the oleoresin of cubeb will serve a good purpose.

Gargles:**IV. Compound Sage Gargle:**

Alum	av.oz. 1/2
Sage	av.oz. 1
Honey	oz. 2
Water, boiling	fl.oz. 16

Pour the water upon the sage, let stand until cool, strain, dissolve the alum in the liquid, and add the honey.

V. Acid Gargle:

Acetic acid, 36%.....	fl.oz. 1
Honey	fl.oz. 2
Infusion of rose, to make...	fl.oz. 16

Make the infusion the strength of half an ounce of the dried petals of red rose to one pint of boiling water; dissolve in this, while hot, the honey, strain and add the acid.

This is an excellent gargle for ordinary sore throat.

VI. Alum Gargle:

Alum	av.oz. 1
Honey	fl.oz. 2
Infusion of rose, to make...	fl.oz. 16

Dissolve the alum in the infusion, add the honey and strain.

This is useful in inflamed conditions of the mouth and throat.

VII. Tannin Gargle:

Tannin	dr. 2
Honey	fl.oz. 2
Infusion of rose, to make...	fl.oz. 16

This is useful in salivation, relaxation of the uvula, etc.

VIII. Chlorin Gargle:

Potassium chlorate	gr. 30
Hydrochloric acid, strong...	fl.dr. 1
Tincture of iron chlorid...	fl.dr. 1
Water, to make.....	fl.oz. 4

Place the powdered chlorate in a four-ounce bottle, pour upon it the acid, cork the bottle loosely, shake slightly and when the bottle is filled with yellowish fumes of gas, add the water, shake thoroughly, add the tincture and mix.

This is useful in malignant putrid sore throat.

IX. Iron Gargle:

Potassium chlorate	av.oz. 1
Tincture of iron chlorid...	fl.oz. 2
Water, to make.....	fl.oz. 16

Mix, dissolve and strain or filter if necessary.

X. Guaiac Gargle:

Tincture of Guaiac.....	fl.oz. 4
Alcohol	fl.oz. 4
Solution of potassa.....	fl.dr. 4
Water, to make.....	fl.oz. 16

XI. Borated Myrrh Gargle:

Borax, powder	av.oz. 1
Tincture of myrrh.....	fl.oz. 1
Glycerin	fl.oz. 8
Water, to make.....	fl.oz. 16

Dissolve the borax in the glycerin and water, by the aid of heat if necessary, and then add the tincture.

XII. Carbolic Myrrh Gargle:

Carbolic acid	gr. 16
Potassium chlorate	dr. 4
Tincture of myrrh.....	fl.oz. 1 1/2
Honey	fl.oz. 2
Water, to make.....	fl.oz. 16

Dissolve the chlorate in the water, and add the other ingredients.

XIII. Resorcin Gargle:

Resorcin	dr. 2
Potassium chlorate	dr. 2
Glycerin	fl.oz. 4
Cinnamon water, to make.....	fl.oz. 16

Dissolve the resorcin and chlorate in a portion of the water, then add the glycerin and the remainder of the water.

Tobacco Antidote or Substitute.

The following is recommended:

Licorice root, cut coarse.....	av.oz. 4
Gentian root, cut coarse.....	av.oz. 1
Bay leaves, whole.....	sufficient
Water	sufficient

Make a decoction of the licorice and gentian roots with sufficient water so that it will measure about two pints, when strained. In this decoction macerate the bay leaves over night, remove excessive moisture by shaking, lay them into flat sheets, and by pressure form into blocks the shape of tobacco plugs.

Tonics.

The pharmacist will find it to his advantage to put up for sale some tonic preparation for "building up the system" and promoting appetite. There are a number of such preparations in Part I, such as Beef, Iron and Wine (see formula under Wines), the various syrups and elixirs of hypophosphites (see formulas under Syrups and Elixirs), and also under Tonics (Hamilton's, Hensel's and Wood's, in Part I). The preparations mentioned under Bitters in this volume may be offered as tonics, also the celery preparations mentioned under Nervous Debility Remedies. Other excellent tonics are the following:

I. This may be known as Iron Tonic Syrup.

Solution of iron "protoxide"	fl.oz. 4
Fluid extract of cinchona.....	fl.oz. 8
Fluid extract of senna.....	fl.oz. 2
Sodium phosphate	av.oz. 2
Tincture of nux vomica.....	fl.dr. 4
Water, hot	fl.oz. 4
Simple elixir, to make.....	fl.oz. 32

Dissolve the sodium phosphate in the water, add the other ingredients, let stand for 24 hours, and filter.

II. This preparation may be known as Calisaya Tonic.

Cinchona	av.oz. 2
Bitter orange peel.....	av.oz. 2
Wild cherry bark.....	av.oz. 14
Cinnamon	dr. 1
Calamus	dr. 1
Simple syrup	fl.oz. 10
Alcohol, water, each, to make	fl.oz. 32

Reduce the solids to a coarse powder, and percolate with a menstruum consisting of 2 volumes of alcohol and 1 volume of water until 21 fluidounces of percolate is obtained. Add the syrup, let stand a day or two, then filter.

III. This may be known as Ginger Tonic.

Soluble essence of ginger.....	fl.oz. 8
Comp. tincture of gentian.....	fl.oz. 4
Glycerite of hydrastis.....	fl.dr. 4
Sugar	av.oz. 4
Alcohol	fl.oz. 10
Water	fl.oz. 10

Mix, dissolve by agitation, and filter.

IV. This preparation has been known as Hop Tonic.

Hops	av.oz. 4
Dandelion	av.oz. 2
Mandrake	av.oz. 1
Buchu	av.oz. 1
Alcohol, water, each.....	sufficient

Mix the drugs, reduce them to coarse powder and extract by percolation with a mixture of 1 volume of alcohol and 3 of water to make 64 fluidounces of percolate.

V. This has been called Java Tonic.

Comp. tincture of gentian.....	fl.oz. 4
Simple elixir	fl.oz. 12
Syrup of coffee.....	fl.oz. 16

Toothache Remedies.

Formerly all toothache remedies were prepared in the liquid form—"toothache drops" they were termed. Several years ago, pills or pellets, each for one insertion into the cavity of the tooth, came into use. These have been succeeded lately by pencils or sticks, called "toothache wax" or "toothache gum," which have become very popular. These consist of a fatty body like yellow or white wax or spermaceti with which is incor-

Toothache Remedies (Cont'd).

pared carbolic acid, creosote, chloral hydrate, camphor, etc. This is then formed into small sticks or pencils, or else absorbent cotton is saturated with this mixture, and this is then cut into suitable pieces and formed into similar sticks. Several formulas are also given for liquids containing resinous substances which act as a temporary filling or stopping for the tooth while at the same time the pain is eased.

Inasmuch as the public rarely asks for a proprietary toothache remedy, the pharmacist can always "push" his own article; he may even find it advantageous to have several kinds of toothache remedies prepared ready for sale.

Drops.

The following toothache drops are to be applied on a pledget of cotton. More effective results will follow if the cavity of the tooth be first dried out with a piece of dry cotton.

I.

Camphor	av.oz. 2
Chloroform	fl.oz. 5
Oil of cajuput	fl.oz. 4
Oil of clove.....	fl.dr. 2
Mix and dissolve by agitation.	

II.

Oil of clove.....	fl.oz. 2
Tincture of opium.....	fl.oz. 3
Spirit of ether.....	fl.oz. 6

III.

Chloral hydrate	av.oz. $\frac{1}{2}$
Camphor	av.oz. $\frac{1}{2}$
Chloroform	fl.dr. 4
Ether	fl.dr. 4
Oil of clove.....	fl.oz. 1
Oil of peppermint.....	fl.oz. 1
Alcohol, to make.....	fl.oz. 8

IV.

Beechwood creosote	fl.oz. 1
Chloroform	fl.oz. 1
Oil of clove.....	fl.oz. 1
Oil of camphor.....	fl.oz. 1

Temporary Fillers.

These liquids are similar to the "drops" and act as anodynes (ease pain), and also contain resinous substances which form a temporary filling or stopping for the tooth. Mastic is the favor-

ite resin. The "fillers" are used like the "drops"; applied to the cavity on a pledget of cotton.

Wax or Gum.

Toothache "wax" or "gum" is a favorite form of toothache remedy. It consists of waxy substance (usually yellow or white beeswax), sometimes colored red by keeping in a melted condition with alkanet root and then straining off the excess of root, mixed with anodyne substances like opium, oil of clove, chloral hydrate, etc., then rolled into pencils, cut into appropriate lengths, wrapped in thin waxed paper, and preserved in small vials (1 or 2-dram size). Or a better way is to immerse cotton in the fatty mixture, then cut and wrap the mass as before. In using cut or pinch off a piece of the pencil, warm gently by rolling between the fingers and insert into the cavity of the tooth, previously drying the latter with a pledget of cotton.

V.

Venice turpentine	av.oz. $\frac{1}{2}$
Paraffin oil	fl.dr. 4
Salol	av.oz. $\frac{3}{4}$
Yellow wax	av.oz. $3\frac{1}{4}$
Alkanet, root, sufficient to color.	

Triturate together the salol, turpentine and oil, then add to the wax, previously colored with the alkanet (by melting), allow the mixture to cool and roll into sticks or pencils.

VI.

Paraffin	av.oz. 3
Burgundy pitch	av.oz. 3
Oil of clove.....	av.oz. 1
Carbolic acid	av.oz. 1

Melt the paraffin and pitch together and add the other ingredients when nearly cold, mix with cotton and cut into short rods, wrap in thin waxed paper, and keep in small bottles.

Pellets.

These are of similar composition to the "wax." The mass is divided into small pills, one of which is to be inserted into the cavity of the tooth to relieve pain.

VII.

Opium, powderdr. 2
 Pellitory root, powder.....dr. 1
 Creosote, enough to form a mass.

Make into pellets weighing about one-half grain each.

VIII.

Oil of clove.....drops 40
 Oil of cajuputdrops 40
 Sweet almond oil.....drops 90
 Opium, powderdr. 3
 Belladonna root, powder.....dr. 3
 Pellitory root, powder.....dr. 3
 Yellow waxdr. 4

Melt the wax, incorporate the almond oil, beat in the powders and then the other oils, divide into pills weighing about one-half grain, sprinkle these with powdered clove and keep in bottles or well-closed boxes.

Vermifuges.

Pharmacists are very frequently asked to recommend some remedy for the expulsion of worms in children. The various vermifuges are of different forms, such as syrup, solution, lozenge, powder and species. These may be entitled Pleasant Worm Syrup, Santonin Worm Lozenges, Chocolate Worm Syrup, Tonic Vermifuge, Ideal Worm Powders, etc. A very common ingredient of these preparations is santonin; other common ingredients are oil or fluid extract of wormseed and pink root. These are usually combined with some purgative, such as castor oil, buckthorn, rhubarb, calomel, podophyllin, senna and jalap resin. Another addition sometimes made is some carminative like anise or fennel or the volatile oils of either of these.

The above described remedies are intended only for pin worms and lumbricoid worms. Tapeworms usually infest adult persons and require much different treatment. Formulas serviceable against the latter are also appended.

Inasmuch as worms (except tapeworms) infest children almost exclusively, these preparations are made rather weak so that the dose will be relatively large.

The so-called seat-worms or pin-worms infest the rectal region mostly, and in endeavoring to expel these from children, reliance should not be placed exclusively upon internal remedies but should be assisted by lukeworm injections of infusion of quassia, thymol solution, vinegar and water, etc.

Liquids.

I. Formula of the Illinois Pharmaceutical Association:

Fluid extract of pink root..fl.oz. 5
 Fluid extract of senna.....fl.oz. 3
 Oil of anise.....drops 10
 Oil of caraway.....drops 10
 Simple syrupfl.oz. 8

The dose is one or more teaspoonfuls at intervals of 3 to 6 hours, according to the child's age, until purging commences.

This formula is that of the old and familiar "compound fluid extract pink root and senna," reduced one-half by the addition of syrup.

II.

Santonica, fine powder...av.oz. 1
 Fluid extract of pink root..fl.oz. 3
 Fluid extract of senna.....fl.oz. 3
 Oil of wormseed.....drops 10
 Oil of anise.....drops 10
 Oil of caraway.....drops 10
 Oil of fennel.....drops 10
 Syrupy glucose, to make...fl.oz. 16

This must be well shaken each time before using. It is to be used like No. I]

III.

Santoningr. 32
 Alcoholfl.oz. 6
 Oil of wormseed.....fl.dr. 3
 Fluid extract of wormseed.fl.dr. 2
 Castor oil, to make.....fl.oz. 16

Dissolve the santonin in the alcohol, add this solution to a mixture of the two oils, and to the whole add the fluid extract.

The dose for a child one year old is one teaspoonful twice daily; children of other ages in proportion.

Powders.

IV. Powders may be prepared, each containing santonin, gr. 1, calomel, gr. 1, podophyllin, gr. 1/12, and sugar, gr. 10 to 20. The calomel may be omitted and the podophyllin increased to 1/6 gr., or

Vermifuges (Cont'd).

either may be replaced by resin of jalap.

The dose for a child one year old is half a powder twice daily; for a child two years old one powder.

V.

Santoningr. 10

Podophyllingr. 4

Rhubarb, powdergr. 15

Sugar of milk.....gr. 30

Mix well and divide into 15 powders.

Give 5 hours apart, on an empty stomach, until 3 have been given. Omit a day, repeating the dose if necessary.

Lozenges.**VI.**

See Part I (under Troches) for formula for an excellent worm lozenge, frequently called santonin lozenge. The santonin is mixed with sugar and made into lozenges with tragacanth and orange flower water.

The dose for a child 1 year old is 1 lozenge night and morning; 2 years old, 2 lozenges; 4 years old, 3; 8 years old, 4; 10 years or more, 5 to 7 lozenges; in all cases to be taken twice daily for several days, then to be followed by a cathartic, castor oil preferred. If the worms are not all expelled, the treatment should be repeated.

Teas.**VII.**

Spigeliaav.oz. 4

Mannaav.oz. 4

Sennaav.oz. 2

Fennelav.oz. 1

Cut the spigelia and senna, bruise the fennel, mix, add the manna and reduce the whole to a uniformly coarse powder.

In using, the above amount is sufficient for 7 pints of infusion or "tea," of which half a teacupful is to be given to a child 2 years old morning, noon and night before eating.

For Tape Worms.

Tape worms generally infest adult persons and the doses here given are intended for adults unless otherwise specified.

VIII.

Oleoresin of male fern....drops 30

Pelletierine tannategr. 1

Glycerinfl.dr. 4

The whole is to be taken in a liberal quantity of sweet milk immediately upon arising in the morning.

IX.

Pomegranate root bark....av.oz. 2

Watersufficient

Castor oilfl.oz. 1

Acacia, powderav.oz. 1/2

Syrup of licorice.....fl.oz. 1

Mix the bark in coarse powder with 8 fluidounces of water, macerate for 10 hours, then heat on a water bath for 2 hours, express, heat the residue as before for 2 hours with 7 fluidounces of water, express again, mix the two liquids, evaporate them on a water bath to 4½ fluidounces, make an emulsion with this and the oil and gum, and finally add the syrup.

An adult is to take one-half of this mixture upon arising, subsequently taking a cup of coffee or tea, and following in one-half hour with the remainder of the mixture.

Schafhirt's Tapeworm Remedy.**X.**

This remedy was proposed in 1874 by A. J. Schafhirt, a pharmacist of Washington, D. C., who claimed great efficacy for it. The formula and directions for use are as follows:

Pomegranate root bark.....dr. 4

Pumpkin seedgr. 30

Ergotgr. 30

Oleoresin of male fern.....dr. 1

Croton oildrops 2

Acacia, powderdr. 2

Bruise the first three substances together thoroughly and boil with 8 fluidounces of water for 15 minutes, then strain through coarse cloth. Now rub together the last three ingredients and form into an emulsion with the decoction after it has cooled.

The patient may take a light supper, but before going to bed he should purge himself with a large dose (one ounce) of rochelle salt. On the following morn-

ing the mixture is taken at one dose on an empty stomach. In about 2 hours the worm will be voided, but it is best for the patient to sit in a bucket half filled with lukewarm water. Care must be taken not to tear the worm should it be slow in passing, lest the head reattach itself. If necessary an ounce of rochelle salt may be taken to hasten expulsion. No bad results are said to follow this treatment.

The addition to the foregoing mixture of 1 fluidram of chloroform will add to its efficacy.

Oleoresin of male fern and mixtures containing it must always be well shaken before using.

XI.

Pumpkin seed, deprived of
the outer hard membrane. av.oz. 1
Water fl. dr. 1
Honey av.oz. 1

Beat the seed and water together in a mortar to a uniform paste, then add the honey gradually, mixing the whole well.

The above is recommended for tapeworm in children. No previous fasting is required. In the morning upon arising, the child is to drink a glass of milk; follow this in 1 hour by one-half of the electuary, in 15 minutes the other half, and follow in another 15 minutes with almost a tablespoonful of castor oil.

Vermin Destroyers.

See Lice, Applications for.

Wart Eradicators.

Pharmacists are frequently called upon to recommend or offer some remedy for the eradication of the peculiar excrescences known as warts. These are peculiar in that sometimes a very simple remedy applied but once or twice will cause them to disappear and at other times they persist indefinitely in spite of all treatment.

Everyone is probably familiar with the application of silver nitrate in sticks, concentrated nitric acid, creosote, carbolic acid, or salicylic acid in any of the

forms of corn cures. Glacial, acetic and dichloroacetic acid are frequently employed, while some add salicylic acid in the proportion of 1 in 16 to concentrated acetic acid. Another escharotic solution consists of chromic acid 1 part, water 5 parts. Unna recommends mercurial plaster containing 5 per cent of arsenic. It is also recommended to shave off the wart to the quick and then to apply a compress wet with a saturated solution of ammonium chlorid. A corrosive collodion for warts consists of 1 part of mercuric chlorid dissolved in 20 parts of collodion. Other applications are: Concentrated hydrochloric acid, solution of antimony chlorid, solution of mercuric nitrate, potassium bichromate, arsenic oleate, copper oleate and formaldehyde. Castor oil and oil of cinnamon are also useful. All of these remedies must be applied once or twice daily until the wart disappears. The outer hard, thick layer of cuticle should always be removed before applying anything whatever.

An ointment sometimes recommended is the following:

Verdigris gr. 50
Savin, powder gr. 50
Soap cerate av.oz. 1

The following powder is said to be very effective:

Calomel gr. 30
Boric acid gr. 15
Salicylic acid gr. 5
Cinnabar gr. 3
Rub into the wart 2 or 3 times a day.
Or use the following:
Mercuric chlorid gr. 5
Salicylic acid dr. 1
Collodion fl.oz. 1

In the case of multiple warts, where a large number appear within a short time, there is some constitutional derangement, and the patients are usually advised to take Fowler's solution in very small doses, or magnesium sulfate in 5 gr. doses 3 times daily.

Children's warts, appearing principally on the hands, may be removed by apply-

Wart Remedies (Cont'd).

ing during several days solution of soda or potassa, and then covering them with collodion containing tannin. The same treatment applies for common warts.

Erasmus Wilson considers the application of caustic potassa in stick form to be the quickest and most reliable

eradicator, one treatment being all that is usually required.

Warts appearing on the skin of elderly persons must be looked upon as suspicious (cancer) and should be shown to a reliable surgeon.

Worm Medicines.

See Vermifuges.

VETERINARY PREPARATIONS

Many of the formulas here offered, such as those for condition powders, liniments, poultry powders, etc., may be kept on hand in convenient form for counter sale.

Many of the prescriptions in this Part are taken from Dieterich's Manual, in which the division dealing with remedies for animals was written by a competent veterinarian. Others are from the excellent works published by the Bureau

of Animal Industry of the U. S. Department of Agriculture.

This Part has been divided into the following divisions: Division I—Horse Medicines; Division II—Cattle Medicines; Division III—Sheep Medicines; Division IV—Swine Medicines; Division V—Dog and Cat Medicines; Division VI—Poultry Medicines; Division VII—Bird Medicines.

DIVISION I—HORSE MEDICINES.

The doses mentioned in the following recipes are intended for grown horses, since foals generally require treatment only for those diseases which are peculiar to foals. As a general rule the quantities ordered may be adjusted to suit the age of the animal, according to the following proportions: For a colt 1 year old, 25 per cent of the full dose; for a 2-year-old, 50 per cent, and for a 3 or 4-year-old, 75 per cent of the full dose.

Administering Medicines.

Medicines may be administered to horses by mouth or subcutaneously, or injected into the rectum, bladder or vagina, or insufflated into the nostrils, or they may be applied externally to the skin. Of these, all but the first two are intended to produce local effects only.

Substances given by the mouth may be in the form of powders, pills, pastes, or liquids.

Powders may be coarse or fine, varying according to the manner in which they are given. Condition powders, for example, need not necessarily be in fine powder; the same applies to other insoluble powders mixed with the feed, although the action of the medicine is

more prompt if the powder is very finely divided. Soluble powders may be dissolved in water and then mixed with the feed or with the drinking water. If they are without disagreeable odor or taste, they are readily taken in this manner. These powders may also be put into capsules and then administered in the same manner as boluses. Large gelatin capsules intended for veterinary use are now obtainable from any capsule manufacturer.

Pills ("balls" or boluses), when properly made, are cylindrical in shape, 2 inches in length and about $\frac{3}{4}$ inch in diameter. They should be soft, so as to be easily compressible. They should preferably be fresh, but, if necessary to keep them for some time, they should be made up with glycerin or some such agent to prevent them from becoming too hard.

Boluses are preferred to drenches when the medicine is extremely disagreeable or nauseating, when the dose is not too large, when it is difficult to administer liquid to the horse, or when the medicine is intended to act slowly. Some substances cannot or should not be made into boluses, such as those

Giving Medicine (Cont'd).

given in large doses, or oils, or caustic substances, unless the latter be in small dose and diluted and thoroughly mixed with the vehicle.

Substances suitable for making into boluses can be made into a mass by means of glycerin, glucose, syrup, honey, powdered soap and a small amount of water, etc. Paper is sometimes wrapped around boluses when given, but this is necessary only when they are so sticky as to adhere to the fingers, and no well-made bolus should have this fault. Paper used for this purpose should be thin but tough.

In giving a bolus, untie the animal, open his mouth, grasp his tongue firmly, pull it forward gently, and lay the bolus, previously slightly moistened, as far back on the tongue as possible. On releasing the tongue, it is drawn back into the mouth and carries the bolus with it. The mouth should be kept closed for a minute or two. There should always be a pail of water at hand to offer the horse after administering a bolus. This precaution will prevent the bolus from being coughed out or becoming lodged in the gullet.

Pastes, or electuaries, are soft solids made by mixing liquid medicines with powdered licorice root or ground flaxseed, or solid medicines with honey, syrup, molasses, or water, as may be necessary. In using they are spread on the tongue, teeth or gums by means of a wooden mangle or a long-handled spoon.

Liquids may be given as drenches when the dose is large, or they may, when but a small quantity is administered, be injected into the back of the mouth with a hard-rubber syringe or be poured on the tongue from a small vial. When giving a drench, care must be taken to use the proper amount of oil or water as a diluent, as more makes the drench bulky and is unnecessary.

Insoluble medicines, if not irritant or corrosive, may be given simply suspend-

ed in water, the bottle to be well shaken just before administering the drench. The bottle used for this purpose should be clean, strong, tapering (without shoulders), and of a size to suit the amount given.

Anaemia Medicines.

Anæmia is often due to lack of exercise in the open air; this condition is most marked in young animals. It may also be due to improper food. Treatment consists in iron and arsenic, giving green food if possible, and indulging in light exercise in the open air. The horse should, be sent to pasture for a time, if possible.

I.

Sulfurav.oz. 2
Potassium bicarbonateav.oz. 1
Sodium chloridav.oz. 20
Give one tablespoonful with each meal.

II.

Black antimonyav.oz. 1
Ferrous sulfateav.oz. 1
Sulfurav.oz. 2
Calamusav.oz. 2
Sodium sulfateav.oz. 6
Sodium chloridav.oz. 8
Reduce all to powder and mix well.
Give one tablespoonful with each meal.

III. Fowler's solution:

Give one tablespoonful once daily upon bread.

Appetite, Loss of, For.

Loss of appetite is often the result of disorders of digestion and may be the accompaniment or precursor of other more serious affections. The appetite may be improved by giving bitter or aromatic substances, or else saline substances.

The Condition Powders mentioned in this division are useful for improving the appetite.

I.

Black antimonyav.oz. ½
Crude tartar (argols).....av.oz. 1
Caraway seedav.oz. 2
Mustard seedav.oz. 2
Rye flourav.oz. 2
Calamusav.oz. 4
Gentianav.oz. 4

Juniper berriesav.oz. 4
Watersufficient

Mix the drugs in powder form with enough water to make soft mass or paste.

Smear one tablespoonful of this on the horse's tongue three times a day.

II.

Gentian rootav.oz. 4
Sodium sulfateav.oz. 2
Sodium chloridav.oz. 1
Sodium bicarbonateav.oz. 1

Give 2 tablespoonfuls with each meal.

III.

See also Condition Powders.

Bee, Wasp, Hornet Stings.

These are more irritating than the bites of flies, partly because the barbed sting is left in the wound and partly because of the character of the venom. When a swarm attacks an animal the result may be fatal. Treatment consists in the application of ammonia water; a solution of sodium bicarbonate; a solution of potassium permanganate, 2 grains to the ounce; or lead acetate, 2 drams, tincture of opium, 1 fluidounce, and water, 1 pint. The imbedded sting should be extracted.

Bladder Inflammation, or Cystitis.

Cystitis may be caused by abuse of irritant diuretics, such as cantharides, turpentine, resin, etc., by the presence of stone in the bladder, by the introduction into the bladder, of an uncleaned catheter, by the presence of acrid plants in the fodder, etc. Treatment consists first in the removal of the cause, such as the cantharides or other blistering agent from the skin, or the extraction of stone or gravel. If the urine has been retained and decomposed, it must be completely evacuated through a clean catheter and the bladder thoroughly washed out with a solution of one dram of borax to a quart of tepid water. This must be repeated twice daily until the urine no longer decomposes. The diet must be light, such as bran mashes, roots and fresh grass, and the drink im-

pregnated with linseed or slippery elm tea. When the acute symptoms have subsided, a daily dose of 1 fluidram of fluid extract of buchu and ½ fluidram of fluid extract of nux vomica will serve to restore lost tone.

See also Urinary Diseases.

Blind Staggers.

See Staggers.

Blisters.

I.

Cantharides, fine powder.....av.oz. $\frac{3}{4}$
Euphorbium, fine powder.....av.oz. $\frac{3}{4}$
Corrosive sublimate.....av.oz. $\frac{1}{4}$
Mercurial ointmentav.oz. 2
Linseed oilfl.dr. 4
Sulfuric acidfl.oz. 1
Nitric acidfl.oz. 1
Oil of turpentine.....fl.oz. 4
Petroleumfl.oz. 2

Add the sulfuric acid gradually to the linseed oil, then add the nitric acid very gradually, and after that the turpentine and petroleum. Let stand for several days, decant from residue, and mix with the decanted liquid the mercurial ointment, to which have previously been added the corrosive sublimate, cantharides and euphorbium.

Extreme care must be taken, in mixing the acids and oil, to add the acids very slowly, with constant stirring, to the oil contained in a broad vessel, such as an evaporating dish.

II.

Red iodid of mercury.....gr. 60
Oil of cajuput.....gr. 60
Petrolatumgr. 480

III. A liquid blister:

Cantharidesav.oz. 1
Oil of turpentine.....fl.oz. 8
Water of ammonia.....fl.oz. 4
Olive oilfl.oz. 2
Oil of sassafras.....fl.oz. 1

Macerate for several days, then strain.

Hager devised the following for veterinary and farmers' use. It keeps sores clean, kills lice, cures scab and itch, and keeps flies, mosquitoes and such insects from animals:

Salicylic aciddr. 2
Boraxdr. 2
Caustic sodadr. 4

Blisters (Cont'd).

Aloes	dr. 4
Oil of anise.....	fl.dr. 1
Oil of spike.....	fl.dr. 4
Oleic acid, crude.....	fl.oz. 1
Gum benzoin	av.oz. 1
Water	fl.oz. 6
Alcohol	fl.oz. 12
Carbolic acid, crude.....	fl.oz. 30

Rub the benzoin, aloes and salicylic acid to a fine powder, and add them to the oils dissolved in the alcohol. After a day's maceration, add to the mixture the oleic acid, the soda and the borax dissolved in the water, and, lastly, the carbolic acid. Shake the whole well for half an hour, and after a week's maceration in a cool place decant the clear liquid.

For use shake well with twice its bulk of water, and add 100 to 120 times its bulk of water, stirring thoroughly. For scab and itch, dilution with only 30 or 40 times its bulk is necessary.

Catarrh, Bronchial, For.

Bronchial catarrh usually begins with fever and is generally accompanied by coughing, and the discharge of purulent matter from the nose. If the dry cough does not soon loosen, and there is no nasal discharge, the fomentations recommended under "Glanders" should be employed. These fomentations should not be continued longer than necessary to induce the discharge, as otherwise harm may result to the nasal mucous membrane. In addition to using the medicines mentioned below, warm applications should be bound around the throat and warm drinks should be administered.

I.

Ammonium chlorid	av.oz. 1
Fenugreek	gr. 400
Fennel	gr. 400
Marshmallow	av.oz. 3

Reduce all to powder and mix well.

Give in 2 doses in warm meal or in warm "soft" food.

II.

This is for chronic bronchial catarrh:
Sodium sulfate av.oz. 4 |

Sodium chlorid	av.oz. 4
Sodium bicarbonate	av.oz. 2
Licorice root	av.oz. 2

All should be in powder and should be well mixed.

Give 1 tablespoonful with each meal.

III.

Mercurial ointment	av.oz. 2
Suet	av.oz. 3
Oil of henbane.....	av.oz. 5

To be applied to the throat every morning and evening.

Catarrh, Nasal, Remedies for.

Nasal catarrh may be an ordinary "cold in the head" or it may develop into a chronic catarrh. The former is not serious except in so far as it may lead to something worse or become chronic. An ordinary catarrh requires simply rest for a few days and the inhalation of the vapors of boiling water. The latter treatment is to be repeated several times daily.

When the disease becomes chronic, it requires persistent medical treatment. Mineral tonics and local medications are of the most value. For eight days give the following mixture:

Reduced iron	av.oz. 3
Nux vomica	av.oz. 1

Divide into 16 powders.

Give one powder mixed with the food twice a day.

Arsenous acid (or ordinary white arsenic) in doses of 3 to 6 grains three times daily is a good tonic for such cases. Sulfur burnt in the stable is a valuable adjunct, care being taken that the gas is well diluted with air so as not to suffocate the animal. Chlorinated lime sprinkled around the stall will also be beneficial. It is advisable to keep a quantity of it under the manger so that the horse inhales the odor when eating hay. The horse may be made to inhale the vapor of creolin or compound tincture of benzoin by adding 2 ounces of either of these liquids to some hot water contained in a pail and holding to the horse's nose.

The animal's nose should be kept

washed, and the discharge cleaned from the manger and stalls.

Cathartic Medicines.

It is frequently necessary to give a cathartic to a horse, as this animal cannot, like some others, remain constipated long without serious consequences.

I.

Cape aloes	av.oz.	1
Ginger	dr.	2
Potassium carbonate	dr.	1
Gamboge	dr.	1
Oil of fennel.....	drops	20

Make into a mass by means of powdered soap and water, roll into a cylinder about 2 inches long, and cover with gelatin or with thin paper, like tissue paper, suitably oiled or greased to prevent the adhesion of the mass to the paper.

II.

Cape aloes	av.oz.	1
Ginger	dr.	2
Potassium carbonate	dr.	1
Croton oil	drops	10
Oil of anise.....	drops	30
Water	fl.oz.	8
Linseed oil	fl.oz.	8
Tincture of opium.....	fl.dr.	4

Powder the aloes and ginger, add the potassium carbonate, mix with the water, add the oils of anise and croton, then the tincture and finally the linseed oil.

To be given at one dose. In cases of unusual weakness or prostration of the animal, the croton oil may be omitted.

In putting up this formula in large quantity for general sale, it would be better to substitute powdered gamboge for croton oil, using in the prescription above named 60 grains.

III. See also Colic Remedies and Constipation Cure.

Colic Remedies.

Colic is probably the most common ailment of horses. It is usually due to obstinate constipation and retention of urine; occasionally it is caused by diarrhea. In the former instance, purgative and carminative remedies should be administered and warm applications should be made.

If the colic is due to diarrhea, alum and similar substances with carminatives are employed.

The usual treatment is by warm applications to the back, abdomen and legs, also frictions with a turpentine mixture, until perspiration ensues. Then fasten blankets to the back and abdomen to allow the horse to remain perspiring for a time. In the meantime, one of the remedies mentioned below is to be used.

In case there is constipation, the bowels should be emptied by means of the hand, previously well oiled; in 15 minutes give an enema of warm chamomile tea. As soon as the bowels and bladder are emptied, the colic will disappear.

If the abdomen of the horse is distended with gas, the animal should be taken out for a short trot.

I. This is an application for the body as directed above:

Oil of turpentine.....	fl.oz.	4
Ammonia water	fl.oz.	1
Alcohol	fl.oz.	15

II. The usual remedy for colic is a mixture of one fluidounce each of laudanum and sweet spirit of nitre. This is best given with a pint of raw linseed oil which acts as a cathartic.

III.

Chlorodyne	fl.oz.	1
Spirit of nitrous ether.....	fl.oz.	2
Linseed oil, raw.....	fl.oz.	13

Give at one dose, repeating in 2 hours if necessary.

IV. Hypodermic injections containing eserine may be employed, instead of internal remedies, to relieve colic due to constipation; these produce more prompt results.

A.

Eserine sulfate	gr.	1½
Distilled water	fl.dr.	1½
Dissolve and inject at one dose.		

B.

Eserine sulfate	gr.	1½
Pilocarpine hydrochlorid.....	gr.	5
Distilled water	fl.dr.	2½

Colic Remedies (Cont'd).

Use at one injection. The latter is particularly valuable when the colic is due to obstinate constipation.

When using these injections, the external treatment should be the same as otherwise. Enemata may also be given. Internally warm chamomile tea only may be given.

V.

Tincture of opium.....	f.oz.	1
Ether	f.oz.	1
Alcohol	f.oz.	1¼
Oil of anise.....	drops	30

Give one tablespoonful every 15 to 30 minutes in a pint of water.

Also make energetic frictions of the abdomen with oil of turpentine.

VI.

For colic caused by constipation:

Magnesium sulfate.....	av.oz.	18
Althæa	av.oz.	3½
Rye flour	av.oz.	3½

Add water or simple syrup to form a mass.

Give one-half of this mass and repeat the dose in one-half hour.

VII.

For colic due to constipation and retention of urine:

Sodium sulfate	av.oz.	18
Juniper berries, coarse powder	av.oz.	3½
Rye flour	av.oz.	3½

Make into a mass or paste with simple syrup or glucose.

This is to be administered like the preceding.

VIII.

For colic due to diarrhœa.

Alum	dr.	5
Althæa	av.oz.	1½
White oak bark.....	av.oz.	1½
Juniper berries	av.oz.	1½

All of these should be in powder and should be formed into a mass with molasses.

IX. The U. S. Bureau of Animal Industry recommends chloral hydrate in both "cramp" (spasmodic) and "wind" (flatulent) colic, the dose being one av. ounce dissolved in a pint of water. For

cramp colic, use a mixture of 2 fluidounces each of sulfuric ether and laudanum with 8 fluidounces of raw linseed oil. Another mixture for this purpose is 2 fluidounces each of sulfuric ether and alcohol with 8 fluidounces of water. It is important to give a purgative, either a "horse ball" of aloes or else a full dose, say a pound, of epsom or glauher's salt, dissolved in water. Enemas of warm water, or in wind colic, 1 to 2 fluidounces of oil of turpentine with 8 fluidounces of raw linseed oil are recommended.

In wind colic, diluted alcohol or whiskey may be given, or aromatic spirit of ammonia in 1-ounce doses at short intervals.

Condition Powders.

These preparations are also known as "Horse Powders," "Horse and Cattle Food" and "Stock Food." Pharmacists frequently dispense preparations of this character made by themselves; as titles, they may select those given above, also such as "Maud S. Condition Powder," "Prairie Condition Powder," "Farmer's Condition Powder," "Arabian Condition Powder," "O. K. Condition Powder," etc.

The following list will be of interest, as well as of service, in determining what ingredients may enter into the composition of a condition powder:

Alteratives.

Sodium hyposulfite, sulfur.

Diuretics and Diaphoretics.

Alum, black antimony, buchu, cream of tartar, pure and crude, juniper berries, lobelia, potassium nitrate, resin.

Expectorants.

Blood root, potassium chlorate, elecampane, licorice root, lobelia, resin.

Tonics.

Iron carbonate, gentian, cinchona, poplar bark, iron sulfate.

Aromatics and Correctives.

Anise, sodium bicarbonate, camphor, cascarrilla, capsicum, cumin seed, fenu-

greek, ginger, grains of paradise, mustard, salt, sassafras.

Emollients and Laxatives.

Aloes, magnesium sulfate, flaxseed meal, sodium sulfate, oil cake meal.

Sedatives.

Asafetida, digitalis, skunk cabbage, valerian.

The usual dose of these powders is about one tablespoonful 2 or 3 times daily in food.

I.

Black antimonyav.oz. 12
Sulfurav.oz. 10
Elm barkav.oz. 5
Resinav.oz. 2
Potassium nitrateav.oz. 2
Anise seedav.oz. 1
Reduce all to powder and mix well.	

II.

Elecampaneav.oz. 8
Fenugreekav.oz. 8
Linseedav.oz. 8
Juniper berriesav.oz. 8
Poplar barkav.oz. 8
Resinav.oz. 8
Licorice rootav.oz. 6
Gingerav.oz. 6
Sodium sulfateav.oz. 6
Sodium chloridav.oz. 6
Sulfurav.oz. 6
Copperasav.oz. 6
Sodium carbonateav.oz. 4
Gentianav.oz. 4
Black antimonyav.oz. 2
Potassium nitrateav.oz. 2
Coriander seedav.oz. 2
Valerianav.oz. 2
Blood rootav.oz. 1
Lobeliaav.oz. 1
Mandrake rootav.oz. 1
Dried alumav.oz. 1
Reduce all to powder and mix well.	

This is a sample of some recipes that are considered valuable.

III.

Fenugreekav.oz. 16
Sulfurav.oz. 8
Cream of tartarav.oz. 4
Potassium nitrateav.oz. 4
Licorice rootav.oz. 4
Black antimonyav.oz. 2
Gentianav.oz. 1
Aniseav.oz. 1
Common saltav.oz. 1
Reduce all to powder and mix well.	

IV.

Sodium chloridav.oz. 1
Fenugreekav.oz. 4
Licorice rootav.oz. 4
Flaxseed, groundav.oz. 7
Reduce all to powder and mix well.	
Give one ounce daily.	

V.

Black antimonyav.oz. 1
Resinav.oz. 1
Capsicumav.oz. 1
Gentianav.oz. 2
Fenugreekav.oz. 2
Sulfurav.oz. 2
Saltpeterav.oz. 2
Cream of tartarav.oz. 2
Gingerav.oz. 2
Licoriceav.oz. 3
Reduce all to powder and mix well.	

Dose, 1 tablespoonful once or twice a day.

VI. Magoffin's formula:

Alum, powderlb. 3
Saltpeterlb. 3
Asafetidalb. 3
Copperaslb. 5
Rosinlb. 5
Sulfurlb. 5
Oil-cake meallb. 10

Reduce all the drugs to powder and mix the whole thoroughly.

Directions: Give a horse a heaping tablespoonful every morning, in wet oats or provender, for 6 or 8 days; after that, the same dose every other day for a few days. The same dose may be given to a cow or hog.

VII. Condition Powder, Darby's:

Sodium sulfateav.oz. 8
Sulfurav.oz. 4
Fenugreekav.oz. 4
Gentianav.oz. 2
Black antimonyav.oz. 2
Reduce all to powder and mix well.	

Constipation Cures.

Constipation is usually caused by improper feeding, but may be the result of other conditions; it may also be the cause of colic (see Colic Remedies). In ordinary constipation cathartic remedies and enemas are indicated.

See also Cathartics.

Cough Remedies.

Coughs should be treated by binding warm applications about the throat or making fomentations as described under "Glanders." If the nasal secretion is too copious, it may be checked by giving a powder containing some lead acetate. In addition, the following remedies may be employed:

I.

Antimony sulfidav.oz. 1
 Licorice rootav.oz. 2
 Sodium chloridav.oz. 5
 Mix all in powder form.
 Give 2 tablespoonfuls after each meal.

II.

Ammonium chloridav.oz. 5
 Antimony sulfidav.oz. 1
 Cream of tartar (or
 argols)av.oz. 2
 Linseed mealav.oz. 10

Divide into 8 powders and give one of these in a mucilaginous or starchy drink twice a day.

III.

Ipecacav.oz. 1
 Squillav.oz. 1
 Licoriceav.oz. 2
 Mix into 7 balls with syrup or honey.
 Give one 3 times a day.

IV.

Aconite leaves, powder.....dr. 6
 Digitalis, powderdr. 4
 Anise, powderdr. 4
 Arsenicgr. 4

Mix, and divide into 6 powders.

Give one every night in food.

This remedy is useful in chronic cough.

V. For poultice:

Mustard, ground or powder.av.oz. 3
 Wheat branav.oz. 9
 Mix well.

In using, mix this powder with water warmed to about 75 deg. C. and apply it in the usual manner for poultices.

The addition of the mustard makes the poultice somewhat of a counter-irritant but without being as irritating as a mustard plaster.

Diarrhea Remedies.

Diarrhea is often the result of "catching cold," but may also be the precursor or accompaniment of other disorders. Mild cases may be cured by giving dry fodder and warm drinks or adding flour to them. In severer cases, aromatic and bitter substances may be administered, and in some cases astringents may be required. Applications should be made to the entire abdomen; the whole body should be rubbed vigorously and then covered with blankets so as to retain the perspiration produced by the rubbing. This rubbing of the entire body should be repeated every 3 hours.

I. For mild cases:

Alumav.oz. 1
 Calamus rootav.oz. 2½
 Angelica rootav.oz. 2½
 Wormwoodav.oz. 2½
 Rye flourav.oz. 2½
 Watersufficient

All the drugs should be in powder and enough water should be added to form a paste.

Place a lump, the size of a hen's egg, on the tongue every 5 hours, between meals.

II. For mild cases:

Iron sulfate, powder.....av.oz. ½
 Althæa, powderav.oz. 3
 Water, sufficient to form a mass.

Divide into two doses, and give these within 3 hours of each other.

III. For severe cases:

Iron sulfate, powder.....av.oz. 1
 Alum, powderav.oz. 1
 Oak bark (red or white)...av.oz. 2
 Calamus rootav.oz. 2
 Rye flourav.oz. 4

Water, enough to form a mass or paste.

Place a piece the size of a hen's egg upon the tongue every 2 hours.

IV. For obstinate cases:

Tanninav.oz. 1
 Althæa, powderav.oz. 1½
 Simple syrup or molasses..sufficient

Divide into 3 pills and give 1 pill every evening.

V. The U. S. Bureau of Animal Industry recommends giving an oleaginous purge, such as castor oil or raw linseed oil, the former preferred. If the diarrhea still continues after the medicine has acted, give half-dram doses of sulfuric acid in 8 fluidounces of water 2 or 3 times daily. Good results often follow the use of powdered opium, 2 drams, bismuth subnitrate, 1 ounce, 3 times daily. But by all means the water and feed the horse is getting should receive attention, as these are usually at fault.

Distemper Remedies.

See Strangles, Remedies for.

Diuretics.

See Urinary Diseases, Remedies for.

The following may also be recommended:

Potassium acetate	av.oz. ½
Fluid extract of buchu.....	fl.oz. 1
Fluid extract of uva ursi....	fl.oz. 1
Gin	fl.oz. 1
Tincture of opium.....	fl.oz. 1
Sweet spirit of nitre.....	fl.oz. 2
Glycerin	fl.oz. 1½
Water	fl.oz. 8

Give 1 to 2 fluidounces at a dose.

It sometimes happens that the animal is simply afflicted with a slight disturbance of the kidneys, producing what is termed by horsemen and veterinary surgeons yellow water; for this ailment a simpler remedy is demanded, and the following will prove of service:

Potassium nitrate	av.oz. 1
Fluid extract of buchu.....	fl.oz. 2
Sweet spirit of nitre.....	fl.oz. 4
Anise water	fl.oz. 9

Give 1 or 2 tablespoonfuls at a dose, night and morning, for 3 days, and then in the morning only, for one week.

Dysentery Remedies.

Dysentery, sometimes called "bloody flux," is more common in colts than in full-grown animals. In colts, unless given prompt attention, it often proves fatal in a few days. Opium is given internally and may be combined with calomel. Externally the animal should be rubbed frequently and warm applications made.

I.

Opiumgr. 75
 Althæaav.oz. ¾
 Water, to make a mass.
 Divide into 5 pills.
 Give one pill every 5 hours.

II.

Tannic acidav.oz. ½
 Licorice root, powder.....av.oz. 1
 Simple syrup, to make a mass.
 Divide into 5 pills.
 Give one pill every 5 hours.

III. For external use:

Tincture of capsicum.....fl.oz. 1
 Spirit of mustard.....fl.oz. 1½
 Spirit of camphor.....fl.oz. 8
 Apply a tablespoonful to the abdomen 3 times daily, rubbing for 5 minutes with a woolen cloth.

Dyspepsia and Indigestion Remedies.

Dyspepsia may be due to loss of appetite or to too hasty eating, causing imperfect mastication. The affected animal will become emaciated, it will be flatulent ("wind on the stomach"), and the dung will have a fetid odor; in the latter undigested oats will be observed. If the animal is addicted to too hasty eating, the oats should be mixed with chopped hay before feeding. The following recipes will be found valuable:

I.

Sodium chloridav.oz. 5
 Sodium bicarbonateav.oz. 2
 Calamus root, powder....av.oz. 1
 Reduced irongr. 90
 Give 1 tablespoonful with each meal.

II. The U. S. Bureau of Animal Industry states that if the indigestion is accompanied by distention of the stomach and bowels with gas, the following is to be used:

Sodium bicarbonate,
 Ginger, powder,
 Gentian, powder, each, equal parts.

This mixture is to be given in heaping tablespoonful doses twice a day, before feeding. Or the powder may be mixed with half a pint of water and given as a drench.

As a digestive tonic, the following is good:

Indigestion (Cont'd).

Sodium sulfateav.oz. 8

Sodium chloridav.oz. 4

Sodium bicarbonateav.oz. 2

Give a heaping tablespoonful with each feed.

Other things should be looked after. For example, if the teeth are sharp and irregular, they should be filed down; if any are decayed, they should be extracted; if the horse is addicted to ravenous eating or to bolting of food, the feed should then be given from a large manger so that the grain may be spread out and the horse thus compelled to eat more slowly.

Epizooty Remedies.

See Influenza Remedies.

Eyes, Inflammation of the, For.

Inflammation of the eyes may be due to mechanical injury or to a cold. If the conjunctiva is affected, the inflammation is of catarrhal character; if the cornea is affected, it is of rheumatic origin.

The eye must strictly be protected from bright light; it should be bathed three times daily with water not too cold and covered with cloths moistened with lead water. In severe cases, aloes pills should be given sufficient to produce purgation, the cheeks should be rubbed with a counter-irritant ointment, and instead of using lead water, apply the following solutions:

I.

Zinc sulfategr. 16

Distilled waterfl.oz. 16

Mix and dissolve.

Fold a cloth so as to form four thicknesses, lay over the inflamed eye and moisten with the solution; repeat the moistening every 2 hours.

II.

Zinc sulfategr. 15

Crocatod tincture of opium.fl.dr. 1½

Infusion of elder flowers...fl.oz. 16

Mix and dissolve. Tincture of opium may be substituted for the crocatod tinc-

ture. The infusion may be prepared from 1 av. ounce of drug; plain water may be substituted, if desired, for the infusion.

This preparation is to be applied like the preceding.

III.

Silver nitrategr. 5

Distilled waterfl.oz. 2

Mix and dissolve.

Drop 2 or 3 drops into the eye once daily after washing with water.

IV. For opacity of the cornea:**A.**

Calomelgr. 60

Sugar of milk.....gr. 60

Mix well, rubbing to a very fine powder.

Take as much as will lie on the point of a knife and blow into the eye, first washing the latter. Repeat every second day.

B.

Zinc oxidgr. 6

Sugargr. 60

Prepare and use like the preceding.

Farcy, Remedies for.

See Glanders and Farcy, Remedies for.

Fever Medicines.

Fever is usually the result of other diseases; it is frequently accompanied by increase in the pulse rate. The normal temperature of the horse is 37 to 38 deg. C. (97 to 98 deg. F.), but may rise in fevers to 40 deg. C. (104 deg. F.), or even to 41 (106 F.).

Fever generally begins in the horse with a chill, the hair stands erect, the muscles shiver, the feet and ears feel cold while the rump feels hot.

I.

Potassium nitrateav.oz. 1

Sodium sulfateav.oz. 10

Rye flourav.oz. 4

Make into a mass or paste with simple syrup or molasses.

Give one-half in the morning and the other in the evening.

II.

Sodium salicylate	av.oz. 3
Licorice root	av.oz. 2
Rye flour	av.oz. 2

Make into a mass with water.

Give one-half of this mixture one morning and the remainder the following morning.

III. For Malarial Fever:

Quinine sulfate or muriate..	av.oz. 1
Althæa	av.oz. 3

Make into mass with syrup and divide into 4 pills.

Give the four pills during two consecutive days, one each morning and evening.

IV. For Rheumatic Fever:

Salol	dr. 5
Althæa	dr. 5

Make a mass with simple syrup or glucose and divide into two boluses.

Both pills are to be given at one dose.

V. These pills are of special value against the fever accompanying influenza, glanders, etc.

Acetanilid	dr. 5
Althæa	av.oz. 1

Form into a mass with simple syrup and divide into 2 boluses.

Give 1 bolus in the morning and 1 in the evening.

Flies, Treatment for.

See the formula under Mosquito Oil, which makes an excellent preparation for warding off the attacks of flies. Some species of flies attack horses and suck their blood, producing great annoyance. These insects not only suck the blood, but also instil an acid poison into the skin, and may transfer infectious germs from one animal to another. Various means are used to prevent these attacks such as applying the above-mentioned "mosquito oil," sponging with a decoction of tobacco leaves, dusting with insect powder, removing all manure heaps, mixing the manure with chlorinated lime, etc. For the poisoned bites apply ammonia water, or a solution of 1 part of carbolic acid in 20 of glycerin or sweet oil, or 2 drams of sodium bicar-

bonate and 1 dram of carbolic acid in a quart of water may be used.

See also Gnat Oil.

The following is highly recommended:

Oil of pennyroyal.....	fl.dr. 4
Oil of lavender.....	fl.dr. 2
Carbolic acid	fl.dr. 1
Fish oil, to make.....	fl.oz. 16

Founder or Laminitis, Remedies for.

This disorder of horses is very common. Usually the soft parts of the hoof are affected; the animal then steps with exceeding caution; it lies down mostly in the stall, and groans frequently; the pulse-rate is increased, and sometimes there is fever. Usually either front feet or hind feet only are affected.

Mild cathartics should be given and care should be taken that there is a normal flow of urine; antifebrile remedies should be administered. As there is usually constipation, the bowels should be emptied by means of salt water enemas; when these are used, cathartics should, of course, be omitted. External stimulating liniments or counter-irritant ointments should be applied. The animal should be fed only on half rations and the food should be of an easily digestible character.

I.

Camphor, powder	av.oz. ¼
Potassium nitrate, powder..	av.oz. 2
Juniper berries, crushed....	av.oz. 4
Rye flour	av.oz. 4
Sodium sulfate, powder....	av.oz. 8
Water	sufficient

Make into an electuary and give one-fourth of the whole every 5 hours.

II. For the fever:

Aloes, powder	av.oz. 1
Sodium sulfate, powder....	av.oz. 8
Rye flour	av.oz. 4
Water	sufficient

Make an electuary, divide into 2 parts and give 3 hours apart.

III. For shoulder lameness, use the following:

Ammonia liniment	fl.oz. 5
Oil of turpentine.....	fl.oz. 1

Apply twice a day.

IV. Regarding acute laminitis (ac-

Founder (Cont'd).

cording to the U. S. Bureau of Animal Industry), what has been called the "American treatment" is simple and efficient. It consists solely in the exhibition of large doses of potassium nitrate (4 ounces in a pint of water every 6 hours) and the continued application of cold water to the ankles and feet. The disease frequently subsides in a week. In subacute forms, smaller doses, say $\frac{1}{2}$ to 1 ounce, of potassium nitrate should be given.

The water used for bathing should have a temperature of 45 to 50 deg. F. The water may be in a tub in which the animal can stand, or if the animal is lying down, swabs may be used which should be wet every half hour with the water. Tincture of aconite may be given in conjunction with the nitre when the heart is excited and beats strongly, in 10-drop doses every 2 hours.

Galls or Blisters, For.

Blisters or galls are brought about by badly fitting harness or saddles, which produce local sores very difficult to cure. The sores should be washed two or three times a day with soap and water; the ointment should then be applied two or three times daily on clean soft cloths.

I.

Salicylic acid	av.oz. $\frac{1}{2}$
Zinc oxid	av.oz. 1
Water	av.oz. 1
Mutton tallow	av.oz. $2\frac{1}{2}$
Lard	av.oz. 5

II.

Salicylic acid	av.oz. $\frac{1}{2}$
Mutton tallow	av.oz. $2\frac{1}{2}$
Lard	av.oz. 3
Lead plaster	av.oz. 4

III.

Tannin	av.oz. 1
Camphor, powder	av.oz. 2
Zinc oxid	av.oz. 3
Mix and sift through a fine sieve.	

Sprinkle on the raw or injured surfaces, after having washed them with tepid water and carbolic soap.

IV. A most valuable remedy in veterinary practice for all kinds of sores, bruises, cuts, or whenever the skin is broken is the application of Friar's Balsam, the compound tincture of benzoin of the U. S. P., and may be profitably put up under some appropriate name and sold by pharmacists.

V. The U. S. Bureau of Animal Industry mentions other remedies, such as a solution of 10 grains of silver nitrate in a fluidounce of water; 20 grains of lead acetate or zinc sulfate to an ounce of water; or 1 part of carbolic acid with 15 parts of glycerin. Saddles or other parts of the harness should be made to fit properly, and should be cleaned and oiled to remove all dirt and made soft and pliable. Any simple astringent wash or powder will effect a cure provided the sores are not irritated by friction.

Glanders and Farcy, Remedies for.

This is a rather common disease and may result from contracting cold as well as from infection. The two forms are distinguished as a benign and a malignant form; the remedies mentioned below apply only to the former. The malignant form of glanders is a highly dangerous and infectious disease and should be treated only by those well versed in its treatment. Mallein, a serum, is used to determine the presence of the disease.

The diseased horse is languid, perspires easily, has diminished appetite and a cough. From the inflamed nostrils flows a discharge, watery at first, later becoming thick and mucous. When the secretion assumes the latter character, a swelling appears in the throat, which interferes with mastication. This swelling will become purulent, break open and discharge, and subsequently will heal, after which the horse appears quite well.

Farcy and glanders are the same disease but different manifestations. Glanders refers to the general character of the disease while farcy refers to the nodules and eruptions on the face.

Treatment consists in keeping the animal warm by covering with a woolen blanket, also binding a cloth about the throat. Internally give mild cathartics, and assist the process of the swelling in the throat by the application of stimulating ointments or even by means of poultices. In feeding the animal, grind the oats and mix with warm water.

I. For obstinate cases:

Black antimony	av.oz. 1
Sulfur	av.oz. 1
Fennel seed	av.oz. 1
Calamus root	av.oz. 1
Juniper berries	av.oz. 2
Rye flour	av.oz. 2
Oil of turpentine.....	fl.dr. 1½
Water enough to make a mass.	

Give a mass the size of a duck's egg four times a day.

II.

Black antimony	av.oz. 2½
Ammonium chlorid	av.oz. 3
Sulfur	av.oz. 3
Juniper berries	av.oz. 9
Sodium sulfate	av.oz. 9
Rye flour	av.oz. 10
Water, to make a mass.	

Give a piece the size of a duck's egg every 2 hours.

III. For very mild cases:

Buckthorn berries, coarse powder	av.oz. 2
Anise seed	av.oz. 2
Sodium chlorid	av.oz. 5
Sodium bicarbonate	av.oz. 1
Strew 2 teaspoonfuls on each meal.	

IV. This is employed to promote the nasal secretion.

Ammonium carbonate	dr. 3
Carbolic acid	fl.dr. 1½
Oil of turpentine.....	fl.dr. 3
Water	fl.oz. 3

Put about 7 ounces of hayseed into a basin, pour hot water into it, and to this add the above ingredients; cover the horse's head with a cloth, and stir its contents thoroughly, so as to facilitate the liberation of the steam. Keep this up for a quarter of an hour. Repeat the treatment once each day.

Gnat Oil.

The following preparation is said to have been used successfully as an application to stock to guard against the attacks of "buffalo gnats":

Crude carbolic acid.....	fl.oz. 1
Fish oil	fl.oz. 15

See also Flies, Treatment for.

Grease, Remedies for.

By grease is understood an inflammation of the heel accompanied by a fetid discharge. Treatment is only external, the affected feet being washed 2 or 3 times daily with green soap and water and dried thoroughly, after which counter-irritant or astringent remedies are to be applied, such as one of the following:

I.

Copper sulfate	gr. 120
Ferrous sulfate	gr. 120
Alum	gr. 160
Water	fl.oz. 16

Apply this lotion after washing and then wrap with a woolen bandage.

II.

Salicylic acid	gr. 80
Carbolic acid	m. 40
Sweet oil	fl.oz. 8

Wash the parts three times daily with green soap and water, then dry with a cloth, and apply this oil.

Gripes, Medicines for.

See Colic Remedies.

Heave Medicines.

I.

Linseed meal	av.oz. 15
Sodium sulfate	av.oz. 10
Elecampane	av.oz. 10
Lobelia	av.oz. 10
Rosin weed	av.oz. 10
Alum	av.oz. 5
Fenugreek	av.oz. 5
Gentian	av.oz. 3
Blood root	av.oz. 3
Tartar emetic	av.oz. 1

The dose is a tablespoonful 3 times a day.

II.

Linseed meal	av.oz. 15
Rosin weed	av.oz. 10
Lobelia	av.oz. 10
Elecampane	av.oz. 10
Sodium sulfate	av.oz. 10

Heave Medicines (Cont'd).

Fenugreek	av.oz. 5
Alum	av.oz. 5
Conium	av.oz. 3
Bloodroot	av.oz. 3
Gentian	av.oz. 3
Tartar emetic	av.oz. 1

The dose is a tablespoonful 3 times a day.

III.

Tartar emetic	av.oz. 1
Lobelia	av.oz. 2
Skunk cabbage	av.oz. 4
Elecampane	av.oz. 4
Licorice root	av.oz. 5

This may be diluted if desired with linseed meal, fenugreek, or other drugs.

The dose is a teaspoonful 3 times a day.

IV. The U. S. Bureau of Animal Industry states that arsenic is effective for palliating the symptoms. It may be given as Fowler's solution or solution of arsenous acid in doses of 1 fluidounce in the drinking water, or as powdered arsenous acid in 3-grain doses with the feed, each to be given 3 times a day. The dose may be cautiously increased as the animal becomes accustomed to the drug. If the bowels do not act regularly, a pint of raw linseed oil may be given once or twice a month, or a handful of glauher's salt may be given in the feed twice daily, as long as may be necessary. However, all medical treatment is of secondary importance; most attention should be paid to the diet.

Heels, For Cracked.

If there is much heat but the skin is unbroken, a lotion of 1 dram of lead acetate to a pint of water may be applied on a thin bandage, covered in cold weather with a dry one. This same lotion may be used after the cracks appear, or a mixture of equal parts of sulfuric acid, glycerin and water, applied on cotton and well covered by a bandage. In case these should prove unsuitable, the following may be used:

Lead acetate, fine powder....	dr. 4
Carbolic acid	drops 40
Petrolatum	av.oz. 4

Herpes, Remedies for.

Herpes consists of minute vesicles that appear in circular groups or clusters, with little tendency to burst but rather to dry up into thin scabs. It sometimes accompanies or follows specific fevers, and is, on the whole, most frequent at the seasons of changing the coat—spring and autumn. It is seen on the lips and pastern but may occur on any part of the body. The duration of the eruption is two weeks or more, the tendency being to spontaneous recovery. The affected part is very irritable, the disease causing a sensitiveness and a disposition to rub out of proportion to the extent of the eruption.

It may be treated with zinc ointment. The irritation may be allayed by applying an aqueous mixture containing opium, belladonna, or lead acetate. A course of bitters, such as half an ounce of cinchona once daily for a week may strengthen the system and thereby counteract the disposition to the eruption.

Hoofs, Preparation for the.

Aside from the appearance which it gives a horse's hoofs, the occasional use of a good hoof-dressing really promotes the comfort of the animal and prevents brittleness of the hoof. The following are simple and useful formulas for this purpose:

I.

Oil of origanum.....	fl.oz. 1
Camphor	av.oz. 1
Lard	av.oz. 16

Apply twice every week or two.

II.

Tar	av.oz. 8
Tallow	av.oz. 8

Use like the preceding.

III. Should there be any disease of the hoof as hoof-bound, etc., the following ointment will produce satisfactory results:

Camphor	av.oz. 1
Balsam of fir.....	av.oz. 1
Oil of turpentine.....	fl.oz. 1
Oil of cajuput.....	fl.dr. 4
Compound tincture of iodine.....	fl.dr. 5
Lard	av.oz. 6

IV. The following cement is useful for cracked hoofs:

Gum turpentineav.oz. 1
 Gum ammoniacav.oz. 3
 Gutta perchaav.oz. 6

The first two are melted together by means of a water bath, then added to the gutta percha, previously melted, with constant agitation. If a black color is desired lampblack may be added.

When it is to be used the cement should be softened in hot water and pressed in the hoof crack, which has previously been well cleaned.

Indigestion, Remedies for.

See Dyspepsia and Indigestion, Remedies for.

Influenza Remedies (Pinkeye—Epi-zooty).

The early symptoms of this disease are languor and loss of appetite. After one or two days there is fever and an increased pulse-rate, the mucous membranes become yellowish, and the thirst increases while the appetite is diminishing. Internal and external remedies are used, the latter being usually ointments of a stimulant character.

I.

Sodium sulfateav.oz. 10
 Licorice rootav.oz. 7
 Ammonium chloridav.oz. 3
 Potassium nitrateav.oz. 3

All should be in fine powder and be well mixed.

Give 1 tablespoonful in warm soft food 3 times a day.

II.

Camphor, powdergr. 75
 Potassium nitratedr. 5
 Aloesav.oz. 1
 Linseed mealav.oz. 1

Water, enough to make 2 boluses.

Give 1 every 3 hours.

III. This is used for the diarrhea which often manifests itself.

Tanningr. 80
 Alumdr. 5
 Licorice, powderav.oz. 1
 Simple syrupsufficient

Make into 2 boluses.

Give 1 every 5 hours.

IV. This is used as a purgative if one be required.

Aloesdr. 5
 Dried sodium sulfate.....av.oz. 3½
 Linseed mealav.oz. 1½
 Soft (green) soap.....dr. 5
 Simple syrup, enough to form a mass.

Give in 2 doses with an interval of 2 hours.

VI. This is for external use:

Oil of turpentine.....fl.oz. 3
 Spirit of camphor.....fl.oz. 17

Sprinkle upon the abdomen, rub with a brush of straw, and bind a warm blanket about the abdomen.

VII.

Chlorodynefl.oz. 1
 Spirit of nitrous ether.....fl.oz. 2
 Solution of ammonium acetatefl.oz. 2
 Waterfl.oz. 10

This dose is to be given every 3 hours during the first stage when there is much shivering.

VII. The U. S. Bureau of Animal Industry recommends injecting large quantities of cold water into the rectum as the safest antipyretic. Antipyrine may be used with alcohol and strychnine. Quinine and salicylic acid may be given in 1-dram doses, but the continuous use of quinine may increase the after-depression.

Jaundice Remedies.

Jaundice, or "the yellows," causes a yellow discoloration of the mucous membranes of the eyes, nose and mouth. The urine is saffron-colored, the dung is of a dirty gray color, and there is usually constipation. It is caused by the retention and absorption of bile into the blood. It may be an accompaniment of any inflammatory disease.

Treatment consists in ridding the system of the excess of bile and this is best accomplished by giving purgatives that act on the liver, such as calomel, 2 drams, aloes, 7 drams. Glauber's salt in handful doses once or twice a day for a week is also effective. Mandrake, rhubarb, castor oil and other cathartics that

Jaundice Remedies (Cont'd).

act upon the first or small bowels may be selected. The bowels should be kept open by avoiding hard, dry, bulky foods.

Laryngitis, Remedies for.

The following remedy is highly recommended:

Cocaine hydrochlorid	gr. 30
Codeine sulfate	gr. 75
Bitter almond water.....	fl.oz. 12

Give $\frac{1}{2}$ to 1 ounce every 4 to 6 hours.

Liniments.

These preparations may be dispensed under such names as Horse Liniment, Veterinary Liniment, Barbed Wire Liniment, Stable Liniment, etc.

I.

Carbolic acid, crude.....	fl.oz. 2
Benzine	fl.oz. 15
Oil of turpentine.....	fl.oz. 15
Oil of tar.....	fl.dr. 4
Oil of spike.....	fl.dr. 4
Camphor	dr. 2
Capsicum	dr. 2

Macerate for several days, then strain.

II.

Camphor	av.oz. 1
Carbolic acid	fl.oz. 1
Oil of origanum.....	fl.oz. 2
Oil of tar.....	fl.oz. 2
Crude petroleum	fl.oz. 2
Oil of turpentine.....	fl.oz. 12
Liquid petrolatum	fl.oz. 12
Benzine	fl.oz. 16

III. This is called White Oil Stock**Liniment:**

Eggs	2
Green soap	av.oz. 1
Gum camphor	av.oz. 1
Ammonia water	fl.oz. 1
Alcohol	fl.oz. 1
Oil of origanum.....	fl.oz. 1
Oil of turpentine.....	fl.oz. 3
Water	fl.oz. 3

Mix the soap and water to a smooth paste, beat in the eggs, add the oils and incorporate thoroughly. Dissolve the camphor in the alcohol and stir this into the previous mixture.

IV. This is recommended as an especially good "barb-wire liniment":

Carbolic acid	fl.oz. $\frac{1}{2}$
Oil of turpentine.....	fl.oz. 1
Pine tar	fl.oz. 2
Fish oil, to make.....	fl.oz. 16

Wash the cut or sore thoroughly with warm water and castile soap and apply the liniment once daily for a week. Then 2 or 3 times a week thereafter.

Mange or Scabies Remedies.

Scabies is most apt to affect old or ill-fed horses and generally appears on the side of the neck, on the shoulder, the back, the hips, at the root of the tail and on the feet.

In all cases the first thing to be done is to wash the affected parts with a warm solution of green soap. The animal must also be separated from the others, and special care taken in feeding and grooming it. It must be curried and brushed with implements not used on the other animals, and the harness must be reserved strictly for it to prevent infecting the other animals.

Mange is always caused by a minute animal, called an acarus or mite. This animal burrows in the skin, a scab being formed, in which the mite may be discovered by the aid of a magnifying glass. The symptoms are, of course, an incessant and intolerable itching with the formation of scab, the size of the scab constantly increasing.

I.

Creosote, beechwood.....	fl.oz. 2
Green soap	av.oz. 10
Alcohol	fl.oz. 6

Mix and apply to the affected parts after washing and drying them.

II.

Sulfurated potassa	av.oz. 1
Green soap	av.oz. 2
Water	fl.oz. 17
Oil of turpentine.....	fl.dr. 2

Dissolve the soap and the potassa in the water by the aid of heat, and then add the oil of turpentine.

Wash the affected parts with a weak solution, dry with a cloth, and then apply this liquid. Repeat this once a day.

III. This is recommended for foot mange:

Salicylic acid	av.oz. $\frac{1}{2}$
Mercurial ointment	av.oz. 3
Lard	av.oz. $6\frac{1}{2}$

Wash the affected parts with a solution of green soap, then dry them and apply this ointment once a day.

IV. The U. S. Bureau of Animal Industry directs the removal of the scabs by soapsuds, and, if necessary, with a brush, and the thorough application of a decoction of tobacco leaves, 3 av. ounces to a half gallon. This may be applied more than once and should always be repeated after 15 days to destroy the new brood of acari that may have been hatched in the meantime. All harness and stable utensils should be similarly treated; blankets and rubbers may be boiled, and the stalls should be covered with a whitewash of lime containing 4 av. ounces of chlorinated lime to the gallon.

V. Trasbot's (French) application is the following:

Coal tar	fl.oz. 3
Oil of cade.....	fl.oz. 3
Benzine	fl.oz. 10

VI. At the Veterinary School at Toulouse (France) the following is preferred:

Burnt alum	av.oz. 2
Sulfur	av.oz. 3
Sabadilla, powder	av.oz. 5
Sweet oil	pints 3
Digest on a water bath for 2 hours.	

Mosquito Oil.

Carbolic acid, or cresol.....	fl.oz. 2
Oil of pennyroyal.....	fl.oz. 4
Spirit of camphor.....	fl.oz. 6
Oil of tar.....	fl.oz. 6
Lard oil	fl.oz. 12

This is effective for keeping flies and mosquitoes off horses.

Ointments.

Ointments are a class of very useful remedies for the treatment of some of the diseases of stock. Every pharmacist should have on hand, ready for sale, a good veterinary ointment.

I.

Compound tincture of iodine.....	fl.oz. 2
Camphor	av.oz. 2
Oil of sassafras.....	fl.oz. 1
Lard	av.oz. 15

II.

Tannin	av.oz. ½
Carbolic acid, crystal.....	av.oz. 1
Oil of organum.....	fl.oz. 1
Camphor	av.oz. 3
Zinc oxid	av.oz. 3
Lard	av.oz. 16

III. Some of the ointments mentioned under "Preparations for the Hoof" and "Remedies for Galls or Blisters," may also be recommended for general use.

Peritonitis, Treatment for.

The U. S. Department of Agriculture recommends opium, in powder, 1 or 2 drams, with calomel, 30 grains, every 2, 3 or 4 hours. Extensive counter-irritants are to be applied to the abdomen, consisting of mustard plasters, mercurial ointment, turpentine stupes, or even mild blisters. Purgation should never be resorted to. If it is desired to empty the bowels, do so with gentle enemas, but usually this is not necessary.

Pinkeye, Remedies for.

See Influenza Remedies.

Poisoning of Horses.

In cases where it is necessary to kill a horse and it is impossible to shoot him, as, for example, when he is in a stall, a German veterinarian recommends injecting a solution of strychnine (sulfate or nitrate) into the jugular vein.

Quittor, Remedies for.

Quittor is a term applied to various affections of the foot wherein the tissues which are involved undergo a process of degeneration that results in the formation of a slough followed by the elimination of the diseased structures by means of a more or less extensive supuration. The disease may attack the cutaneous tissues or it may strike deeper. In any event, the parts must be kept clean and free from pus. The proper kind of application to make is one of antiseptic character. A solution of mercuric chlorid, 1 in 500, with some ammonium chlorid, is excellent. Balls of oakum are to be wet with this solution

Quittor (Cont'd).

and applied to the wound, being retained in place by means of a bandage. Other remedies are a 1% solution of copper or zinc sulfate or zinc chlorid, 4% carbolic acid solution, 2% solution of silver nitrate, or creolin, pure or diluted. The following is also recommended:

Ointment of mercury	
nitrate	av.oz. 1
Cottonseed oil	fl.oz. 3
Mix together by aid of a gentle heat.	

Rickets, Remedies for.

Rickets is a disease which frequently affects colts. The following is useful:

Prepared chalk	av.oz. 8
Calcium phosphate	av.oz. 8
Potassium bicarbonate.....	av.oz. 4
Fennel	av.oz. 4

Reduce all to powder and mix well.

Give 1 tablespoonful with each feeding.

Ringbone Cures.

See Spavin and Ringbone Cures.

Ringworm, Remedies for.

There are two kinds of ringworm, the circinate (*tinea tonsurans*) and the honeycomb (*favus*). In the circinate form the symptoms are the formation of a circular scurfy patch where the fungus has established itself, the hairs of the affected spot being erect, broken, or split up and dropping off. Later the spot first affected becomes bald and there is around it a circular row of hairs which are erect, bristly, broken and split. These in turn are shed and a new row outside passes through the same process, so that the extension is made in more or less circular outline.

Treatment consists in applying tincture of iodine twice a week for 2 weeks, first shaving or extracting the hairs of the affected part. Whitewash the stable and stall to destroy the germs, wash the brushes and harness with caustic soda solution and apply a solution of corrosive sublimate, 1 dram to a quart of water, and treat the blankets and such covering with boiling water.

The honeycomb ringworm forms closely aggregated, dry, yellowish crusts on the trunk, shoulders, flanks or thighs, and is accompanied by severe itching. Treatment is the same as for the preceding.

Scratches, Remedies for.

See Heels, For Cracked.

Scabies, Remedies for.

See Mange or Scabies Remedies.

Screw-Worm, Remedies for.

Screw-worm and other flies deposit their eggs in sores and wet, filthy spots in the horse's skin and the grub which hatches out gives rise to serious trouble. The wet, dirty hair should be removed and the wounds kept clean and rendered antiseptic by a lotion of 2% carbolic acid water, or a mixture of 1 part of oil of tar in 20 ounces of sweet oil, or other antiseptic application. The grubs that are present should be picked off.

Shoulder, For Lameness.

Spirit of soap.....	fl.oz. 5
Spirit of camphor.....	fl.oz. 5
Ammonia water	fl.oz. 1

Apply several times daily. Or use any good, strong liniment. See Liniments.

If the lameness be of a rheumatic character sodium salicylate should be given.

The following is also advised in lameness of the shoulder of rheumatic origin:

Veratrine	gr. 9
Alcohol	fl.oz. 1

About 2½ fluidrams are to be injected once daily into the affected part.

Sinews, For Strained.

Inflammation of the sinews in the rear part of the leg between the knee and hoof may result from injury or may be due to rheumatism, influenza, etc. The affected animal must not be worked, but should be walked about slowly for a half an hour every day. If the affection is a recent one, apply one of the below mentioned lotions. If there is no improvement in the course of a week, apply the salve of mercurial ointment with potassium iodid.

I.

Ammonium chlorid	dr. 1½
Spirit of camphor.....	fl.dr. 1½
Diluted acetic acid.....	fl.oz. 4
Water	fl.oz. 12

Mix and apply on a cloth morning and evening for at least 8 days.

II.

Spirit of camphor.....	fl.oz. 2
Spirit of ether	fl.oz. 2
Tincture of capsicum.....	fl.oz. 3
Alcohol	fl.oz. 4
Oil of turpentine.....	fl.dr. 1½
Ammonia water	fl.dr. 3
Ammonium chlorid	av.oz. 1
Sodium chlorid	dr. 3
Water	fl.oz. 7

Dissolve the salts in the water and add the remaining ingredients.

Shake the embrocation well. Dilute half a pint of the fluid with a pint and a half of water and with this wash the entire length of the leg and then wrap it up in a woolen bandage.

Spavin and Ringbone Cures.

As will be observed, these are usually of a counter-irritant or blistering character.

I.

Oil of turpentine.....	fl.oz. 8
Alcohol	fl.oz. 8
Tincture of iodin.....	fl.oz. 8
Camphor	av.oz. 4
Crude petroleum	fl.oz. 1
Oil of rosemary.....	fl.dr. 4

II.

Oil of turpentine.....	fl.oz. 13
Alcohol	fl.oz. 13
Tincture of iodin.....	fl.oz. 2
Camphor	av.oz. 2
Oil of sassafras.....	fl.oz. 2
Crude petroleum	fl.oz. 1
Corrosive sublimate	gr. 70

Dissolve the camphor and the corrosive sublimate in the alcohol and add the remaining ingredients.

For ringbone cut off the hair and rub the ointment well into the lumps once in 48 hours. For spavins, apply once in 24 hours for three mornings. Wash well, previous to each application, with clean soapsuds, rubbing over the places with a smooth stick to remove the thick yellow matter.

III.

Tincture of cantharides.....	fl.oz. 1
Tincture of iodin.....	fl.oz. 3
Tincture of myrrh.....	fl.oz. 3
Oil of turpentine.....	fl.oz. 4
Alcohol	fl.oz. 5

IV.

Cantharides, powder	av.oz. 4
Oil of origanum.....	fl.oz. 4
Oil of amber	fl.oz. 4
Oil of turpentine.....	fl.oz. 4
Cotton seed oil.....	fl.oz. 4
Sulfuric acid	fl.oz. 1

Mix all except the acid in a broad, shallow vessel such as an evaporating dish, then very slowly and with constant and rapid stirring add the acid. When the liquid has cooled it may be bottled.

For ringbone or spavin apply with a sponge tied to the end of a stick until it is no longer absorbed into the parts; 24 hours afterwards grease well with lard, and in 24 hours more wash off with clean, warm soapsuds. Two or three applications 3 or 4 days apart may be required.

Spavin, Foot, Remedies for.

So-called foot spavin, if slight, may possibly be dispersed by means of hot poultices of linseed or bran. If the swelling is tolerably large, make an opening on the lower side to allow the fluid to escape, cleanse the cavity by injecting 2% carbolic acid water, and then apply a counter-irritant ointment, such as the following:

Green soap	av.oz. 4
Ammonia water	fl.oz. 1
Crude petroleum	fl.dr. 5
Tincture of cantharides.....	fl.dr. 5

Rub daily for 1 or 2 days, then omit for 2 days and repeat the application. Continue this intermittent application until the ointment is all used.

Staggers, Remedies for.

Staggers are of two kinds, the first being known as "blind, sleepy or mad staggers," and called technically phrenitis. It is an inflammation of the brain, in which the animal practically loses his senses, plunges in the stall till loose, and then dashes madly about, regardless of

Staggers (Cont'd).

all obstructions, striking or biting at anything in his way. It usually proves fatal, and if not the animal only partially recovers. The method of treatment formerly advised was copious bleeding, but this, even if successful in saving the animal, leaves him in such a weakened state that he is practically valueless. A better method of treatment is to give 1 or 2-dram doses of tincture of gelsemium every 4 hours, also a dose of 8 av. ounces of glauher's salt in thin bran mash. The head should be bathed in cold water.

The other kind of staggers is called "stomach staggers," and is due to distention of the stomach from overfeeding, which results in cerebral symptoms manifested first by drowsiness and sleepiness, followed by a sudden awakening of the animal, when he throws himself about violently and his eyes take on a wild, unmeaning stare. This form of staggers, if not properly treated, may also prove fatal. The following treatment will prove effective:

Fluid extract of ginger.....fl.oz. 6
Sodium hyposulfiteav.oz. 2
Waterfl.oz. 4

Dissolve the sodium salt in the water and add the fluid extract. The dose is a wineglassful every 4 hours. A stimulating injection of a handful of salt in 4 quarts of water should also be used. As soon as the medicine arouses the digestive functions and the food passes the pylorus into the intestines, the animal will obtain relief. Both food and water should be withheld until there is marked improvement.

Stomach Catarrh, Remedies for.

Gastric catarrh is frequently accompanied by constipation or diarrhea. In either case, the appropriate remedy must be given. See under Constipation Cures or Diarrhea Remedies.

I. For chronic cases:

Sodium bicarbonateav.oz. 4
Sodium chloridav.oz. 4
Sodium sulfateav.oz. 4
Juniper berriesav.oz. 2

Reduce to coarse powder and mix well.

Give 1 tablespoonful with each meal.

II. For acute cases:

Precipitated chalkav.oz. 3
Sodium chloridav.oz. 3
Gentianav.oz. 1
Fennelav.oz. 1

Reduce all to powder and mix well.

One tablespoonful is to be given with each meal.

Strangles, Remedies for.

Strangles, also called distemper and colt-ill, is an infectious disease, seen mostly in young animals, and usually leaving an animal which has had one attack protected from future attacks. It appears as a fever, lasting a few days, with the formation of matter or pus in the air tubes and lungs, and frequently the formation of abscesses in various parts of the body, both near the surface and in the internal organs. It usually leaves the animal after convalescence perfectly healthy and as good as it was before but sometimes leaves it a "roarer," or is followed by the development of deep-seated abscesses, which may prove fatal.

Ordinary light cases require but little treatment beyond warm mash, moistened hay, warm coverings, and protection from exposure to cold. The latter is especially required, as lung complications, severe bronchitis and laryngitis often result as a neglect of this precaution. If the fever is excessive the animal may be given a handful of glauher's salt three times a day as a laxative, also sodium bicarbonate or nitrate in 1-dram doses every few hours, and small doses of black antimony, potassium iodid, aconite or quinine. Steaming the head with vapors of warm water poured over a bucket of bran and hay, in which belladonna leaves and tar have been placed, will allay the inflammation of the mucous membranes and greatly ease the cough.

The swelling of the glands should be promptly treated with hot linseed poultice.

tices, and as soon as pus has formed the swelling should be opened. Blisters and irritants should not be applied to the throat. When convalescence begins care should be taken not to expose the animal to cold, which may bring on a relapse, and while exercise is of advantage, it must not be carried to excess until the animal has entirely regained its strength.

Sunstroke, Treatment for.

The term sunstroke is applied to affections occasioned not exclusively by exposure to the sun's rays, but also by the action of great heat combined generally with humid atmosphere. Exhaustion produced by a long-continued heat is often the essential factor, and is called heat exhaustion. Horses on the race-track undergoing protracted and severe work in hot weather often succumb to heat exhaustion. Draft horses, which are exposed to the direct rays of the sun for many hours and do not receive proper care in watering, feeding and rest in shady places, suffer very frequently from sunstroke.

Sunstroke is manifested suddenly. The animal stops, drops his head, begins to stagger and soon falls to the ground unconscious. The breathing is marked with great stertor, the pulse is very slow and irregular, cold sweat breaks out in patches on the body, and the animal often dies without recovering consciousness. The temperature rises very high, reaching 105 to 109 deg. F.

In heat exhaustion the animal usually requires urging for some time previous to the appearance of any other symptoms, generally perspiration is checked, and then he becomes weak in his gait, the breathing hurried or panting, the eyes watery or bloodshot, the pulse rapid or weak, followed by unconsciousness and death. If recovery takes place, convalescence extends over a long period of time, during which there is lack of co-ordination of movements of the limbs.

Blood-letting is absolutely not to be permitted in sunstroke. Ice or very cold water should be applied to the head and along the spine, and half an ounce of ammonium carbonate or 6 fluidounces of whiskey should be given in a pint of water. Cold water should be showered upon the body of the horse from a hose or otherwise. This should be continued until the temperature is down to 103 deg. F. Brisk friction of the limbs and the application of spirit of camphor often yield good results. The administration of the stimulants should be repeated in an hour if the pulse has not become slower and stronger. In either case, when reaction has occurred, preparations of iron and general tonics are to be given during convalescence.

Iron sulfatedr. 1

Cinchonadr. 2

Gentiandr. 3

Give one such dose with the feed each morning and evening.

Thoroughpin, Remedies for.

This is an enlargement above the hock and is an inflammation of the synovial sac. Formerly the sac was lanced, but this is not now thought to be good treatment. A better plan is to puncture the sac by means of small needles and to empty the fluid through these holes. After this apply an ointment of iodine consisting of 1 dram of iodine to 7 drams simple ointment. Then apply a spring truss so constructed as to press on both sides of the hock. By this means the internal parts of the sac are kept in contact and they finally unite.

The following application is also recommended:

Spirit of camphor.....fl.oz. 2

Ammonia waterfl.oz. 2

Sweet oilfl.oz. 2

Oil of turpentine.....fl.oz. 2

Tincture of arnica.....fl.oz. 4

Tincture of iodine.....fl.oz. 4

It should be applied at least twice daily.

Thrush, Running, Remedies for.**I.**

Chlorinated limeav.oz. $1\frac{1}{2}$
 Waterfl.oz. 16

First wash the affected parts with soapsuds, rinse with clear water, and then wash with the solution of chlorinated lime previously warmed. Then press some oakum, first moistened with the solution, into the opening. Repeat the application once daily.

II.

Alumav.oz. 1
 Copper sulfateav.oz. 1
 Carbolic acidfl.dr. $1\frac{1}{2}$
 Waterfl.oz. 10
 Use like the preceding.

III.

Zinc carbonate,
 Boric acid,
 Calomel, each, equal parts.

Calomel alone is also an excellent dressing.

Urinary Disease, Remedies for.

Urinary diseases are usually manifested by conditions known as polyuria, or the voiding of a large amount of pale urine, and anuria, or retention of urine. The former is usually caused by feeding with decomposed fodder. The latter may be due to "colds," or it may be an accompaniment of other conditions, such as colic.

I. For polyuria:

Camphor, powderav.oz. $\frac{1}{2}$
 Gingerav.oz. $1\frac{1}{2}$
 Rye flourav.oz. 8
 Water.....to form a mass

Give one-eighth of this mass mornings and evenings. If the disease still lingers on the fifth day, the following is recommended:

Camphorav.oz. $\frac{1}{2}$
 Alumav.oz. 1
 Dippel's oilfl.oz. 1
 White oak bark.....av.oz. 1
 Angelica rootav.oz. 3
 Rye flourav.oz. $1\frac{1}{2}$
 Watersufficient

Reduce all the solid drugs to powder, mix well and add enough water to form a soft mass or paste.

Give a piece the size of a hen's egg 3 times daily spread upon the tongue.

II. For anuria:

Juniper berries, crushed....av.oz. 5
 Chamomileav.oz. 1

Make an infusion by pouring on 6 pints of hot water, allow to stand 15 minutes, and strain through cloth, expressing the residue in the strainer.

Administer one-third of this infusion and use the remainder as an enema.

III. The urine may also become bloody, due usually to mechanical injury, such as sprains or fractures of the loins, or to stone in the bladder, kidney, etc. If the disease is due to mechanical injury, treatment should consist first in removing the cause whenever possible, and then in applying general and local styptics. Irritants in the food must be avoided and stones in the bladder or urethra removed. Then mucilaginous drinks should be given freely, such as slippery elm or linseed tea, and styptics, such as tincture of iron chlorid, 3 fluid-drams; lead acetate, 30 grains; tannic acid, 30 grains, or oil of turpentine, 1 fluidounce.

IV. See also Bladder Inflammation and Diuretic Remedies.

Worms, Treatment for.

Poorly-fed animals are more subject to these parasites than well-fed animals. Treatment consists in giving worm medicine and good food.

I.

Oil of tansy.....fl.dr. 4
 Crude petroleumfl.dr. 4
 Asafetida, powderav.oz. $\frac{1}{2}$
 Aloesav.oz. 1
 Rye flourav.oz. 2
 Wormwood, powderav.oz. $3\frac{1}{2}$
 Water.....to form a mass or paste

Every 2 hours a piece of the size of a hen's egg is to be spread upon the tongue.

II.

Asafetidaav.oz. 1
 Gingerav.oz. 1
 Tartar emeticav.oz. 2
 Fenugreekav.oz. 4
 Mustardav.oz. 4

Poplar bark	av.oz. 5
Corn meal	av.oz. 5
American wormseed	av.oz. 8
Salt	av.oz. 8

Two tablespoonfuls are to be given each morning before feeding until four doses have been given.

III. The U. S. Bureau of Animal Industry states that among the best worm medicines may be mentioned santonin, oil of turpentine, tartar emetic, creolin, infusion of tobacco and bitter tonics. To destroy tape-worms, areca nut, male fern and pumpkin seeds are the best.

If a horse is passing the long, round worms, the plan of treatment is to give

twice daily for 3 or 4 days a drench composed of oil of turpentine or creolin, 1 fluidounce, and raw linseed oil, 2 or 3 fluidounces, to be followed on the fourth day by a purge of 1 ounce of aloes. Or the treatment may consist of 2 drams of santonin with 1 or 2 drams of calomel. This dose should not be repeated, but should be followed in 6 hours by a quart of raw linseed oil.

If pinworms are present (the ones that infest the large bowels), injections into the rectum of infusions of tobacco or quassia chips, 4 ounces to the gallon, once or twice daily for a few days, and followed by a purge are beneficial.

DIVISION II—CATTLE MEDICINES.

The doses in the following formulas, when not otherwise specified, are intended for a full-grown animal, consequently when the medicines are to be administered to young, small or weak animals a corresponding reduction must be made in the size of the dose, while for unusually large and strong cattle the doses may be increased. For young cattle the following will serve as a general guide.

Dose Required at Different Ages.

At 1 year, 25% of the adult dose.

At 2 years, 50% of the adult dose.

At 3 to 4 years, 75% of the adult dose.

Administering Medicines.

Medicines may be administered to cattle by the mouth, by injection into the rectum, vagina, udder, veins, trachea, or under the skin, by insufflation into the nostrils, or they may be applied externally.

When systemic effects are desired, they are administered by the mouth or subcutaneously, or, very occasionally, by the rectum.

The simplest way to give medicines by the mouth is to mix them with the food or water. This can be done when the medicine is in the form of a powder or liquid, if but a small quantity is to be given, or if it does not have a taste that is disagreeable to the animal and is not

so irritant as to injure the lining membranes of the mouth and throat.

The usual method of administering bulky or unpalatable doses is to mix them with a liquid vehicle, such as water, milk, molasses or beer, and to give them from a bottle. In administering a drench of this kind the head of the animal should be elevated a little by an assistant. This is best accomplished by standing on the left side of the animal's head and grasping the nose with the thumb and fingers of the right hand inserted in the nostrils, and with the left hand beneath the chin; the head is still further elevated and supported. If the animal is unruly it may be tied in a stall or placed in a stanchion.

The medicine can now be poured into the mouth by inserting the neck of the bottle between the lips on the right side. Care must be taken to avoid getting the bottle between the back teeth. The mouth of the bottle should be inserted as far as the middle of the tongue and the liquid poured slowly.

If the cow coughs the head must be lowered at once to permit the liquid to escape from the larynx. If pouring of the medicine is continued while the animal is coughing, some of the drench may pass down the windpipe to the

lungs and cause a severe or even fatal pneumonia. The bottle used must be large and strong with a sloping neck, without any sharp corners.

The amount of liquid to be given in a drench depends on the effect sought and upon the nature of the medicine. In impaction of the stomach very large quantities of liquid may be given, as much as a gallon, or several gallons at a time. Usually, however, it is not customary or desirable to give more than from 1 to 2 quarts at a dose, and not more than a pint unless required by the irritant properties of the medicine.

Medicines that are soluble should be completely dissolved before they are given. Medicines that are insoluble should be finely powdered and be well shaken with the vehicle just before administration. In the latter case a menstruum with considerable body, such as molasses, flaxseed tea, or milk, will help to hold solids or oils in suspension.

Boluses are sometimes given to larger animals, but they are not so well adapted to the medication of cattle as of horses. Solution is much slower in the paunch of the cow than in the stomach of the horse, and if the cow is so sick as to have stopped ruminating, the bolus may become covered up and lost in the mass of material in the paunch and remain there for days without producing any effect.

The large size or veterinary gelatine capsules are convenient for administering boluses or even liquid medicines. Capsules and boluses are administered by being placed (previously moistened) on the tongue, well back in the mouth while the tongue is drawn forward and the mouth is held open by means of a block of wood placed between the back teeth. The bolus or capsule should be dropped, the tongue released, and the block removed as nearly simultaneously as possible, so that the backward movement of the tongue will carry the bolus or capsule into the throat and lead to its

being swallowed. Care must be taken to avoid having the hand cut or crushed while introducing the bolus or capsule.

Medicines are usually administered by the rectum for the purpose of controlling the bowels and for the treatment of local diseases. Sometimes, however, medicines that have a general effect are given in this way when it is not possible to give them through the mouth. Only drugs that are readily absorbed should be given per rectum for a general effect, and they should be in somewhat larger doses or used more frequently than when given by the mouth. Such stimulants as ether, alcohol or aromatic spirit of ammonia, diluted with four to six times their bulk of warm water, may be used in this way.

Rectal injections, or enemata, are used in the treatment of constipation. If it is the purpose of the injection to soften hardened fecal masses, the water should be lukewarm and it may have some soap dissolved in it. If it is the purpose of the injection to stimulate sluggish bowels to contraction, the water may be cold.

Actinomycosis, For.

Actinomycosis, commonly called "lumpy jaw," or "big jaw," is caused by the "ray fungus," scientifically known as actinomyces. It begins as a swelling or enlargement of the jawbone. It may affect either the upper or lower jawbone, or both sides at the same time. The swelling is painful under pressure and is attached to the bone and skin. Finally soft areas appear beneath the skin, which break, forming ulcers or the openings of fistulous tracts extending back into the bone and discharging a yellowish, sticky pus, which sometimes contains hard, yellow granules or fragments of bone. The jaws become distorted, the teeth drop out, and the destructive process becomes greater and greater.

From what has been stated it will readily be understood that early treatment is necessary. When there is an external opening on the surface of the

swelling, it should be injected with tincture of iodine. When there is no external opening, the skin over the swelling should be painted with the same liquid. The treatment should be applied once daily and should be continued until it is apparent that the growth of the swelling has been checked.

Internally potassium iodid should be given in doses of 2 or 3 drams daily, divided into 2 doses, and given morning and evening in a pint of warm water. This should be continued for 2 weeks, then stopped for 10 days, to be recontinued if found necessary.

Appetite, Loss of, For.

Unless the loss of appetite is the precursor of more serious affection, it may be treated as a simple disturbance of digestion. Any of the mixtures mentioned under Condition Powders in the division of Horse Medicines are supposed to produce an improvement in the appetite.

I.

Gentian, powderav.oz. 2
Sodium bicarbonateav.oz. 2
Sodium chloridav.oz. 6
Sodium sulfate, dried.....av.oz. 8

Give 2 tablespoonfuls to a large animal, 1 tablespoonful to a small animal, once a day, stirred with some water to make a paste. If this be continued for 8 days, it is said to produce a wonderful improvement in the appetite.

II.

Gentian, powderav.oz. 1
Magnesium sulfateav.oz. 10
Mix with 1 quart of warm water and give at 1 dose.

III. This is for calves:

Sodium bicarbonategr. 300
Rhubarb, powdergr. 75
Divide into 2 doses and give each in a cup of chamomile tea.

Appetite, Depraved, Remedies.

Cattle affected with this disease have a variable and capricious appetite in regard to their regular food, but are liable to lick and eat substances for which healthy cattle show no inclination. They

frequently lick lime, coal, earth, gravel, and even the dung of other animals.

The aim in such cases should be to improve the process of digestion and to supply the animal with a sufficiency of wholesome food. The following should also be given:

Iron carbonateav.oz. 4
Gentianav.oz. 4
Fenugreekav.oz. 4
Sodium chloridav.oz. 8
Finely ground bone ("bone
flour") 16

Reduce all to fine powder and mix well.

Give a heaping tablespoonful 3 times a day. In addition to this, 3 tablespoonfuls of powdered charcoal may be mixed with the animal's food 3 times a day, and a piece of rock salt should be placed where the animal can lick it at will.

Blisters.

If a blister for cattle, use one of those mentioned under Blisters in the division on Horses.

Bowels, Inflammation of.

See Stomach and Bowels, Remedies for Inflammation of the.

Bronchitis, Remedies for.

Bronchitis is an inflammation of the mucous membrane of the bronchial tubes. When a primary disease it is generally the result of what is known as "catching cold." It may be secondary to or complicated with many of the diseases of the respiratory system. It may also be caused by breathing irritating gases, or by the introduction of foreign bodies into the bronchial tubes, which sometimes results from injudicious or careless drenching when the larynx is in a temporarily relaxed state. It may be acute or chronic, and is divided, according to the seat of the inflammation, into bronchitis proper when the large tubes are affected, and capillary bronchitis when the smaller tubes are affected.

The animal should be placed in a light, well-ventilated box and kept warm with blankets. The bowels should be kept in a soft condition by means of

Bronchitis (Cont'd).

enemas, etc., but avoiding violent purgatives. The food should be light and nutritious.

In the early stages of the disease give the following mixture 3 times daily:

Fluid extract of belladonna.....fl.dr. 2
Solution of ammonium
acetatefl.oz. 4

Mix when giving with a half pint of water.

In the later stages of the disease use this twice daily:

Ammonium carbonatedr. 3
Spirit of nitrous ether.....fl.oz. 1
Water, to make.....fl.oz. 3

Mix this also with a half pint of water before administering. At the same time give 1 grain of strychnine, preferably in the form of pills or tablets containing nearly this amount.

In some cases the following is preferable to either of the above and may be given with a pint of linseed tea every 4 hours:

Spirit of nitrous ether.....fl.oz. 1½
Aromatic spirit of ammonia.....fl.oz. 2
Gum camphordr. 2

Bronchitis is liable to assume a chronic form if not properly treated in its early stages. Remedial treatment is of little avail when the disease becomes chronic.

Burns and Scalds, Treatment.

For superficial burns, use carron oil (equal parts of lime water and linseed oil). This will exclude the atmosphere and protect the inflamed skin. The blisters should be opened to let the fluid escape, but the cuticle raised by the blister should be allowed to remain. When the burn is extensive and deep sloughing occurs, the parts should be treated like other deep wounds, by poulticing, astringent washes, etc. When the system has sustained much shock, internal stimulants may be required, such as 4 fluid-ounces of whisky or 2 drams of ammonium carbonate, every hour until the animal rallies. When the pain is very great, hypodermic injections of 6 grains

of morphine may be administered every 6 hours.

Carbolic Composition.

See under Horse Medicine. This will be found equally valuable for cattle.

Colic Remedies.

Colic is usually the result of too great indulgence in indigestible food; if not properly attended to may cause death. As a rule, the animal is constipated, eats nothing, but drinks a great deal, groans, etc. If there is no movement of the bowels within 3 days, the affection is likely to prove fatal.

Treatment consists in emptying the bowels by means of the well-oiled hand, after which enemas are to be given every hour. Internally oleaginous cathartics are to be given, to be followed, when the bowels have had a movement, with stomachic remedies.

I. For enema:

Green soapav.oz. 4
Sodium chloridav.oz. 4
Linseed oil, raw.....fl.oz. 8
Waterfl.oz. 32

II. Cathartic drench:

Magnesium sulfateav.oz. 8
Linseed oilfl.oz. 32
Chamomile infusion (1 to
20)fl.oz. 96

Give 1 quart every 4 hours, until all is given, or until the bowels act. If the bowels act before all is administered, the medicine is to be discontinued.

III. Stomachic:

Gingerdr. 2½
Mustarddr. 2½
Gentiandr. 2½

Reduce all to powder and mix well.

Give 1 such powder in a pint of warm water when the bowels have acted and the colic has passed off.

IV. The U. S. Bureau of Animal Industry directs walking the animal about for 10 minutes before administering any remedy, as this allows time for a portion of the contents of the stomach to pass into the bowel, and renders it safe to give medicine. In many cases the walking exercise and the evacuation of

the bowel result in a cure of the disorder. If the pains still persist, give a mixture of 1 fluidounce each of ether and tincture of opium, shaken up with a pint of warm water, and repeat the dose in half an hour if the animal is not relieved.

Condition Powders.

The "condition powders" mentioned under Horse Medicines are equally suitable for cattle.

Constipation Remedies.

Constipation may result from unsuitable food, but may also be the accompaniment of other diseases.

Treatment consists in giving purgatives and enemas and in emptying the bowels by means of the hands, previously well oiled.

I.

Black antimony	dr. 3
Argols (crude tartar)	av.oz. $\frac{3}{4}$
Aloes	av.oz. 1
Sodium sulfate	av.oz. 18

All should be in powder and should be well mixed.

One-fourth of this mixture should be administered every 3 hours in warm chamomile tea or other suitable vehicle.

II. This is for calves:

Rochelle salt	av.oz. 2
Aloes, powder	gr. 150
Linseed meal	gr. 150

Give this mixture at 1 dose in 8 fluid-ounces of warm water.

III. For enema:

Green soap	av.oz. $3\frac{1}{2}$
Water	fl.oz. 32

Give as an enema every hour until evacuation of the bowels ensues.

IV. For subcutaneous use:

Eserine sulfate	gr. $2\frac{1}{2}$
Distilled water	m. 90

Mix and dissolve.

This may be injected subcutaneously to produce an evacuation of the bowels.

Dehorning of Cattle.

The U. S. Bureau of Animal Industry states that a 2 or 3-days-old calf may be dehorned, or more properly speaking, the development of the horns may be

prevented, by the use of a stick of caustic potash. The operation is performed as follows, and is uniformly successful if the calf is not more than 3 days old:

The animal is gently laid over on its side, in which position it is easily held by an assistant, while the operator clips the hair off the little prominence on the frontal bone which marks the spot on the uppermost side of the head where the horn would be developed. Then dip the stick of caustic potash in water and carefully rub it over the spot just clipped for about 10 seconds. The calf is now to be turned over and the corresponding portion of the frontal bone on the other side is to be clipped and cauterized in the same manner. By this time the side first treated is dry and should receive a second application of potash. Give the other side a second treatment of potash, and if the matrix of the horn has been located and the caustic has been properly applied no horns will ever make their appearance.

Diarrhea, Remedies for.

Diarrhea may arise from a "cold" or may be an accompaniment of other disorders.

The remedies used are usually efficient, but it is also necessary to cause the animal to perspire by rubbing and then to cover it warmly. It is also essential to put the sick animal in a warm and roomy stall, free from drafts.

The food should be restricted to a little dry feed (good hay, etc.), no green food being permissible and in place of cold water, warm starchy or mucilaginous water should be given.

I.

Nutgall, powder	av.oz. $1\frac{1}{2}$
Licorice root, powder	av.oz. $1\frac{1}{2}$

Give in 2 doses with an interval of 2 hours, mixing each dose with a pint of warm water.

II.

Opium, powder	dr. $2\frac{1}{2}$
Peppermint, powder	av.oz. $\frac{3}{4}$
Linseed meal	av.oz. 1

Diarrhea (Cont'd).

Give one-half in the morning, the remainder in the evening, in 1 pint of warm water.

III. The U. S. Bureau of Animal Industry states that when the disease depends on irritating properties of the food which has been supplied to the animal, it is advisable to give a mild purgative such as a pint of castor or linseed oil. When the secretions of the bowels are irritating, an ounce of magnesium carbonate and half an ounce of tincture of opium should be shaken up in a quart of linseed tea and given to the animal 3 times a day until the stools present a normal appearance. When there is debility, want of appetite, no fever, but a continuance of the watery discharges from the bowels, then an astringent may be given, such as tannic acid, 1 av. ounce, powdered gentian, 2 av. ounces; mix and divide into 12 powders. One powder is to be given 3 times daily until the stools present a normal appearance. Each powder may be mixed with 8 fluidounces of whisky or blackberry brandy and a pint of water.

Diarrhea in Sucking Calves, For.

Diarrhea in young calves is a rather common as well as serious complaint. It may be due to catching "cold" or it may be caused by a fault in the milk.

Wrap up the animal warmly and administer internal medicines as below and also use suppositories to avoid irritation of the bowels.

I.

Precipitated chalkav.oz. $\frac{1}{2}$
 Alum, powderav.oz. $\frac{1}{2}$
 Rye flourav.oz. $\frac{3}{4}$
 Yolk of egg.....sufficient

Make into 5 pills. Give 1 pill every 5 hours.

II.

Hydrochloric acidm. 80
 Camomile infusion (1 to 20)fl.oz. 4

In cases of abnormally acid stomach, give the above in 2 doses with an interval of 5 hours.

III. Suppositories:

Tanningr. 15
 Cocoa buttergr. 180

Mix and form into 4 suppositories; insert 1 morning and evening after a passage of the bowels, inserting it as far up as can be done with the oiled finger.

Dysentery, Remedies for.

Dysentery may arise from a "cold" or from eating damaged food. Spring and autumn are the times when the affection is most common, owing to sudden and rapid changes in temperature. This disorder is due to inflammation of the gastro-intestinal tract, and results in frequent stools of an offensive odor, and is often accompanied by fever. At first the stools contain undigested food, later, clots of blood, and subsequently they may be almost entirely bloody in character. Treatment must be started early in the course of the disease, as otherwise it may prove fatal.

Treatment consists in energetic friction of the abdomen with turpentine oil and wrapping in warm blankets, this to be repeated every 2 hours. Internally give opium or astringents but always in combination with mucilaginous drinks and oil. To alleviate the painful straining incident to the frequent defecation, it is advisable to use one of the below-mentioned enemas.

I.

Salicylic acidgr. 75
 Alum, powderav.oz. 1
 Linseed oil, raw.....fl.oz. 7
 Infusion of ground linseed.fl.oz. 60

Give a pint of this mixture every 3 hours.

II.

Salicylic acidgr. 75
 Alumdr. 6
 Tannindr. 6
 Linseed oil, raw.....fl.oz. 7
 Infusion of peppermint

(1:10)fl.oz. 7
 Give one-half at a dose and repeat in 3 hours.

III. For enema:

Salicylic acidgr. 15
 Yolk of egg.....gr. 30

Linseed oil, raw.....fl.oz. 4
 Waterfl.oz. 4
 Mix well.

In using, warm the mixture and inject into the bowels every half hour until the straining at defecation ceases, or better, inject after each evacuation of the bowels.

Dysentery in Sucking Calves.

Dysentery in sucking calves sets in soon after birth and usually proves fatal. The disorder is infectious and the utmost cleanliness is required to guard against it. Treatment must be begun as early as possible if the animal is to be saved. The animal is to be wrapped up in woolen blankets, and given internal remedies and rectal suppositories to relieve the painful straining due to frequent defecation.

I.

Salicylic acidgr. 40
 Tannic acidgr. 40
 Infusion of chamomile
 (1:25)fl.oz. 8

Give half at a dose and the remainder in 4 hours.

II.

Tincture of opium.....fl.oz. 1
 Tincture of nux vomica.....fl.dr. 1½
 Port winefl.oz. 6
 Give a tablespoonful every 3 hours.

III. For suppositories:

Salicylic acidgr. 10
 Extract of rhatany.....gr. 30
 Cocoa butterav.oz. 1
 Mix and make into 10 suppositories.

After every evacuation of the bowels, wash the anus with lead water, and insert a suppository as far as possible into the rectum by means of the oiled finger.

Eczema Remedies.

Eczema is not so common among cattle as in horses and dogs, in which it is the most common of all skin diseases. It is occasionally observed under systems of bad hygiene, filthiness, lousiness, overcrowding, overfeeding, excessively damp or too warm stables. It is found to develop now and then in cattle that are fed upon sour substances, distillery swills, house and garden garbage, etc.

There is no one method of treatment which will always prove successful, no matter how early it is begun or how small an area is involved. Special attention should be given to the general health of the animal and its environment. Feeding should be moderate in quantity and not too stimulating in character—green feed, bran mashes, ground oats, clean hay, and plenty of salt. If the animal has been fed too high, give an active purgative, epsom salt preferred, once a week if necessary, and half an ounce of potassium acetate or nitrate may be given in the feed twice a day. If the animal is in poor condition and debilitated, give a tablespoonful of the following mixture in the feed twice a day:

Ferrous sulfate,
 Gentian,
 Sulfur,

Sassafras bark, each, equal parts.

If the animal is lousy, the parasite must be destroyed before the animal can be cured. The external treatment must vary with the character of the lesions; no irritating applications should be made while the disease is in its acute vesicular, or pustular stage, and in the chronic stage, active stimulants must be used. Much washing is harmful, yet crusts and scales must be removed in order to obtain satisfactory results from external applications. Both objects can be obtained by judiciously combining the curative agents with such agents as will at the same time cleanse the skin.

In the vesicular stage, when the skin is feverish and the skin is peeling off, exposing the moist dermis, an application of boric acid solution, 1 ounce to a quart of water, will often relieve the smarting or itching, and also serves to check the exudation and dry the surface. If it fails to have the desired effect, use creolin, 1 ounce to a quart of water, as a wash. Either of these washes may be used several times a day until incrustation is well established. Then use creolin, 1 ounce to a pint of sweet oil, or

Eczema (Cont'd).

zinc salve, giving the affected surface a thorough application once a day.

In chronic eczema, when there is a succession of scabs, or scales, or indolent sores, or fissures, ointment of ammoniated mercury, citrin ointment, or mercurial ointment, each diluted with an equal amount of petrolatum, may be applied every second day, taking care so that the animal can not lick the parts.

In some cases the following mixture will act beneficially:

Oil of tar.....	fl.oz. 1
Glycerin	fl.oz. 2
Alcohol, to make.....	fl.oz. 32

Rub this in after cleansing the parts with warm water and soap.

The internal administration of arsenic often gives excellent results in chronic eczema. It may be given in the form of Fowler's solution, 1 ounce twice a day in water after feeding.

An alkali internally may be of service. As such give 2 ounces of sodium bicarbonate twice daily. Sulfur may also be tried in ounce doses twice daily.

Eye, Inflammation of.

Inflammation of the eye is usually of a catarrhal character caused by catching "cold." The eye first appears reddened, then tears begin to flow, and a mucous substance appears which has a tendency to stick the eyelids together.

Treatment consists in washing with warm milk and applying this solution every hour:

Solution of lead subacetate..	fl.dr. 1½
Distilled water, to make....	fl.oz. 4

Fever Medicines.

Fever is usually an accompaniment of various diseases, but in the absence of knowledge of what the disease is the fever should be treated directly by administering purgatives with saltpeter; cold water enemas may also be used. The following will prove useful:

I.

Potassium nitrate	av.oz. ¾
Sodium sulfate	av.oz. 8

Give one-half of the above in 1 quart of warm bran water at night.

II.

Sodium salicylate	av.oz. 1
Magnesium sulfate	av.oz. 10

Use like the preceding.

Flies, Treatment for.

The remedies mentioned under Horse Medicines are recommended for cattle.

Foot-Rot, Remedies for.

In the earlier stages of the disease, before pus forms beneath the horn, a thorough cleansing and an application of a 5% carbolic acid solution, clean stabling and laxative food will usually remedy the evil. Solution of cresol U. S. P. is also an excellent application. It should be applied to the suppurating tissue between the claws in undiluted state. Care must be taken to avoid contact of this liquid with the skin about the coronary band or heels. If deep sloughing has taken place the carbolic or cresol solution should be used and a wad of oakum or cotton smeared with pine tar should be secured firmly in the cleft. Sometimes warm poulticing with flaxseed meal or bran becomes necessary to relieve excessive fever and pain. If the pus burrows under the horn, its channel must be followed by paring away the horn until the bottom is reached. The after-treatment should be the same as that already recommended.

The following ointment is also good:

Oil of turpentine.....	fl.oz. 1
Rosin	av.oz. 1
Linseed oil, raw.....	fl.oz. 2
Lard	av.oz. 4
Verdigris	av.oz. 4

Melt the lard, oil and rosin together, rub the verdigris to a smooth mixture with the turpentine, and add to the other mixture.

Founder, Remedies for.

Founder or laminitis does not usually occur in such a severe form in the cow as in the horse, but a mild form, denominated "foot soreness," is fairly common. It may be caused by overfeeding, over-

heating, continued standing without exercise on a stone or cement floor without sufficient bedding, or by driving long distances over rough or stony soil.

The inflammation is usually relieved by applying cold packs to the feet, or standing the animal on a soft floor in a stream of running water. It may be well to give a full dose of epsom salt, 1 to 1½ pounds, followed by ½ ounce doses of saltpeter 2 or 3 times a day.

Hoven, Remedies For.

See Tympanitis Remedies.

Indigestion Remedies.

Indigestion is generally produced by irregular feeding or indigestible food, without taking sufficient exercise, or from eating large quantities of non-nutritious food.

The symptoms are irregular passage of feces of an offensive odor, the mouth is slimy, the tongue is coated, the appetite is much diminished, and the animal chews its cud but little.

The treatment consists in the administration of mild laxatives combined with bitter tonics, and of hydrochloric acid.

During the illness the animal should be fed only with very easily digestible food.

I.

Black antimony	dr.	5
Argols (crude tartar).....	av.oz.	1¼
Wormwood	av.oz.	2
Sodium sulfate	av.oz.	15

Give one-fourth of this every 4 hours in a quart of warm water.

II. For obstinate cases:

Hydrochloric acid	fl.dr.	4
Linseed meal	av.oz.	3
Water	fl.oz.	32

Give one-half at night and the remainder in the morning.

III. For chronic cases:

Black antimony	av.oz.	½
Aloes	av.oz.	1
Argols (crude tartar).....	av.oz.	1
Calamus	av.oz.	2
Linseed meal	av.oz.	3

One-third of this is a dose which is to be given every night and morning in a pint of warm water.

Indigestion in Young Calves.

The treatment must vary with the cause. If there is any irritant matter in the bowels, give 1 or 2 ounces of castor oil with 20 drops of tincture of opium. If the sour eructations are marked, a tablespoonful of lime water or 2 drams of calcined magnesia may be given 2 or 3 times a day. If the disorder continues after the removal of the irritant, give 30 grains of pepsin with a teaspoonful of tincture of gentian at each meal time. Any return of constipation must be treated by injections of warm water and soap.

Insect Bites and Stings.

See following heading under Horse Medicines: Bee, Wasp and Hornet Stings; Flies, Treatment for; and Mosquito Oil.

Itching, Remedies for.

Itching is not a disease, only a sensation. It is an affection produced by slight irritation from without or by an internal cause acting upon the sensory nerves of the skin. Nothing characteristic is seen except the secondary lesions produced mechanically by scratching or rubbing.

A common cause of itching is dirt on the skin, due to insufficient care. If the ceiling of the stable is open so that dust and straw may fall down, the skin is irritated and itching may result. It also occurs in some forms of indigestion. It may be due to affections of the liver or kidneys when an increase of effete material has to be thrown off by the skin. Some irritating substances when eaten may be excreted by the skin and thus coming in direct contact with the sensory nerves produce itching. In another class of cases the itching may be due to an atrophy, contraction or hardening of the skin when the nerves become irritated by the pressure.

The chief reliance in treating this symptom must be change of food, plenty of exercise, and in most cases the administration of a cathartic, 1 to 1½

Itching (Cont'd).

pounds of epsom salt mixed with a handful of salt, a tablespoonful of ginger or black pepper, and about 2 quarts of water. Afterwards a half ounce of sodium hyposulfite may be given twice a day for a week, mixed with the feed. For external application when the skin is abraded or thickened from rubbing, a solution of borax, 2 ounces to a quart of water, may be used. A solution of carbolic acid, a half-ounce to a quart of water, may give relief in some cases.

Jaundice, Treatment for.

Jaundice may emanate from the liver or may result from intestinal catarrh. As in the human subject, it is manifested by yellow discoloration of the mucous membrane of the mouth, of the white of the eye, etc. The urine becomes dark and the feces light colored; the appetite is diminished and the animal becomes emaciated.

Treatment consists in giving calomel and sodium sulfate and applying counter-irritant ointments in the region of the liver. If no benefit results from this treatment, then the sodium sulfate should be given with aloes, rhubarb and juniper berries.

I.

Sodium bicarbonateav.oz. 2
 Juniper berries, crushed...av.oz. 2
 Sodium sulfateav.oz. 10

Give half of this in the morning and other in the evening, each dose with a quart of water.

II.

Aloesav.oz. 2
 Rhubarbav.oz. 2
 Argols (crude tartar).....av.oz. 4
 Calamusav.oz. 4
 Sodium sulfateav.oz. 4
 Reduce all to powder and mix well.

Give 1 heaping tablespoonful in a quart of infusion of juniper berries 3 times a day.

Lice Exterminators.

Lice are most apt to trouble young animals, only troubling old ones when

they are very dirty. Green soap and tobacco are the agents usually employed.

I.

Crude naphthalinav.oz. 2
 Green soapav.oz. 10
 Alcoholfl.oz. 10
 Waterfl.oz. 40

Heat the whole together until dissolved and then stir until cold.

Rub the places infested by lice thoroughly with the above, and wash off the next day with warm soda solution. When the animal is again dry repeat this operation twice. The lice generally die after the second application.

II.

Oil of tar.....fl.oz. 2
 Sweet oilfl.oz. 10
 Apply once or twice daily.

Liniments.

Any of the liniments mentioned under Horse Medicines are equally valuable for cattle.

Lumpy Jaw, Remedies for.

See Actinomycosis, For.

Mange, Treatment for.

Mange or scabies in cattle is like mange in other animals a contagious disease caused by an acarus or mite. There are two kinds of these acari in cattle, the psoroptes and symbiotes. The former are the ones which most frequently affect cattle. The U. S. Bureau of Animal Industry advises dipping mangy cattle in dipping tanks in the same manner as sheep are dipped (see Scab, Treatment for, in Division III). The following dipping solution is recommended:

Sulfurav.lb. 24
 Unslaked limeav.lb. 12
 Watergal. 100

Both lime and sulfur should be weighed, not guessed at. Slake the lime with enough water to form a paste, and into this sift the sulfur and mix well. Then add this mixture to 25 or 30 gallons of boiling water contained in a kettle or boiler and boil the mixture for 2 hours at least, frequently stirring the liquid and sediment. The boiling should be

continued until the sulfar disappears, or almost disappears from the surface of the liquid, when the latter will have a chocolate or liver color. Water must be added from time to time to replace that lost by evaporation. Finally add enough water to make about 100 gallons of liquid. The liquid only should be used for dipping.

During the dipping of the cattle if the liquid becomes filthy it should be changed, regardless of the number of cattle dipped. It should never be used when more than 10 days old. The temperature of the liquid when used for dipping should be from 102 to 110 deg. F.

Milk Fever.

See Parturition Fever.

Milk Secretion, for Diminished.

When diminished milk secretion is not due to age or to disease, the following mixtures will prove useful. They have been dispensed under such names as Cow Powder, Milk Powder, and Pulvis Vaccarum.

I.

Caraway	av.oz. 4
Calamus	av.oz. 4
Sodium chlorid	av.oz. 2
Sulfur	av.oz. 1
Reduce all to powder and mix well.	

Give 2 heaping tablespoonfuls twice daily in 1 quart of warm beer.

II.

Anise	av.oz. 2
Fennel	av.oz. 2
Black antimony	av.oz. 4
Sodium chlorid	av.oz. 4

All should be in powder and well mixed.

This mixture should be used like the preceding.

III.

Capsicum	dr. 1
Anise	av.oz. 1
Caraway	av.oz. 1
Potassium nitrate	av.oz. 2
Magnesium sulfate	av.oz. 10

Reduce to powder and mix well.

This is to be used if the suppression of milk is due to indigestion. The food should be changed and 3 doses of this

medicine should be given at intervals of 2 days. Give in a quart of ale or beer.

Milk, For Rapid Curdling of.

There are conditions of cows when the milk soon becomes curdled in spite of the utmost cleanliness. The following mixtures may remove the difficulty. Of course foods containing the least amount of acid should be given the animal.

I.

Sodium bicarbonate	av.oz. 3
Precipitated chalk	av.oz. 4
Fennel	av.oz. 6
Linseed meal	av.oz. 8

All should be in powder and should be well mixed.

Given one-half in 1 quart of warm water, administering the remainder the next day.

Milk, Red and Blue, Remedies.

Red Milk.

Blood may escape with the milk when the udder has been injured by blows, or when it is congested or inflamed or when the circulation has been suddenly increased by richer or more abundant food. The milk frothing up and assuming a pink tinge is often the first sign of "red water" and it may result from eating acrid or irritant plants like the ranunculaceae, resinous plants, etc. Deposits of tubercle or tumors in the udder, or induration of the gland may be causes, irritation due to milking contributing to draw the blood. There may also be a reddish tinge or sediment in milk when madder or logwood has been eaten. If milk becomes red after it is drawn, this may be due to presence in it of the *Micrococcus prodigiosus*.

See also Udder, Inflammation of.

The treatment must vary with the cause. In congested glands give 1 pound of epsom salt and daily thereafter ½ ounce of saltpeter with a dram of potassium chlorate, also bathe the bag with hot or cold water and rub with camphorated oil. If the food is too rich or too abundant it must be reduced. If the disorder is due to acrid plants these

Milk Diseases (Cont'd).

must be removed from the pasture or fodder. If there is induration of the udder, this may be overcome by rubbing with a mixture of iodine ointment 1 part, green soap, 2 parts, or a mixture of mercurial ointment and green soap may be used. Of course, care should be exercised in milking.

Blue Milk.

Watery milk is always bluish, but the presence of the germ *Bacillus cyanogenes* causes a distinct blue shade even in rich milk and cream. It may reach the milk after it has been drawn, or it may find its way into the opening of the milk ducts and enter the milk as it is drawn. In the latter case, frequent milking and the injection into the teats of a solution of 60 grams of sodium hyposulfite in 8 fluidounces of water will serve to destroy them.

If the milk is bluish simply because it is watery, the following remedy should be administered:

Caraway seed	av.oz. 1
Gentian	av.oz. 1
Calamus	av.oz. 1
Sodium chlorid	av.oz. 4

Reduce all to powder and mix well.

Give a tablespoonful with each meal.

Mosquito Oil.

See same heading under Horse Medicines. This preparation is also useful for cattle.

Ointments.

The ointments mentioned under Horse Medicines are also suitable for cattle.

Parturition Fever (Milk Fever).

Parturition fever usually occurs several days after calving. The animal refuses to eat food, is very restless, trembles violently, and then lies down without being able to get up again. Subsequently the animal lies on its side, gnashes its teeth, etc. The symptoms follow each other rapidly, and if the animal is not treated so as to be on the road to recovery in 5 days, the disease will prove fatal. The animal must be

kept in a warm stall, free from drafts, having a thick, high bed of dry straw. It should be kept covered with woolen blankets. Give saline purgatives and inject cool enemas with soap water. If the bowels have operated, give carminatives containing ether. Rub the small of the back with counter-irritant ointments. For the fever, give salicylic acid which may be added to the purgative as well as to the carminative. When the animal begins to eat again, give it warm, soft foods (bran mash with linseed meal, etc.). The udder should be carefully emptied every hour during the course of the disease.

I. Purgative:

Camphor	dr. 5
Salicylic acid	av.oz. 1¼
Sodium sulfate	av.oz. 14

Mix well and divide into 4 powders.

Give 1 powder every 4 hours in a pint of warm chamomile tea. If purgation ensues before all the powders are given, the latter are to be discontinued.

II. For the fever:

Valerian root, cut.....	av.oz. 4
Sodium salicylate	av.oz. 1
Spirit of ether.....	fl.dr. 5
Water	pints 5

Pour 5 pints of boiling water on the valerian, let stand for ½ hour, then strain, adding warm water through the strainer to make the liquid measure 5 pints. To the colature add the other ingredients.

Give 1 pint of this mixture every hour.

Rheumatism Remedies.

In most cases, rheumatism is the result of catching "cold." It may be accompanied with fever or there may be none. The febrile form usually lasts 8 to 10 days, the other may persist for several weeks. The treatment for the first kind consists in first bleeding a vein, then giving purgatives containing saltpeter. The second kind requires diuretic and purgative treatment.

I.

Ammonium chlorid	av.oz. 2
Potassium nitrate	av.oz. 2
Sodium sulfate	av.oz. 12

Reduce to powder, mix, and divide into 4 portions.

This is used as a purgative, 1 powder being given every 3 hours in a quart of warm water.

II.

When there is fever, sodium salicylate in about 1-ounce doses may be administered every 3 hours in a pint of warm water. It is not well to continue this treatment indefinitely on account of the danger of weakening the heart. The drug may be given continuously for a day as directed, after which 1 or 2 doses only per day should be given.

III.

When there is no fever the following may be recommended:

Arnica flowers	av.oz. 3½
Juniper berries, crushed....	av.oz. 3½
Ammonium chlorid	av.oz. 1
Aloes	av.oz. 1
Water, boiling	pints 7

Pour the water upon the arnica and juniper, let stand ½ hour, strain, and in the colature dissolve the remaining ingredients.

Warm 1 quart of this mixture and give every 5 hours.

IV. Application:

Oil of turpentine.....	fl.dr. 6
Spirit of camphor.....	fl.oz. 7½

This mixture should be applied to the swollen joints every 6 hours.

Rickets of Calves.

This is caused by improper feeding, together with a "cold." The joints of the legs become swollen, feverish and painful, the animals suckle less and less, finally get cramps, and then die. A preventive of this disease is to mix some bone ash daily with the mother cow's feed, and it is also advisable to administer about 80 grains once daily to the calf.

If the disease is advanced, rub the joints with alcoholic liniments, and give bone ash or oyster shell in milk; if there is diarrhea treat it by the usual methods. See Diarrhea in Sucking Calves, For.

I. This powder is to be given to build up the bony system:

Levigated oyster shell.....	av.oz. 4
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Give as much as will lie on the point of a small knife 3 times daily in milk.

II. For diarrhea:

Opium	gr. 8
Magnesium carbonate	gr. 40

Give this powder in 4 fluidounces of warm chamomile tea.

III. If there is constipation, give 2 fluidounces of castor oil every 3 hours in warm milk.

IV. For application:

Spirit of camphor.....	fl.oz. 2
Spirit of formic acid.....	fl.oz. 2
Oil of rosemary.....	drops 24

Rub the swollen joints several times daily.

Any other alcoholic preparation may be used, such as spirit of camphor alone or soap liniment.

Ringworm Remedies.

See Tetter or Ringworm Remedies.

Scabies, Treatment for.

See Mange, Treatment for.

Scalds, Treatment for.

See Burns and Scalds, Treatment for.

Shoulder Lameness, Treatment.

Shoulder lameness may be caused by a misstep, bruise, or a fall, or it may be due to a "cold," in which case it is of rheumatic character. Treatment should consist in applying mild counter-irritants and in keeping the part warm.

Ammonia water	fl.oz. 3
Oil of turpentine.....	fl.oz. 3
Spirit of camphor.....	fl.oz. 6
Spirit of soap.....	fl.oz. 6

Rub well into the lame shoulder 3 times daily.

Southern Cattle Fever, For.

See Texas Fever, Remedies for.

Stomach Catarrh.

See Indigestion Remedies.

Stomach and Bowels, Inflammation of the.

It is generally presumed that inflammation of the stomach and bowels is the result either of a "cold" or of eating some poisonous weed.

Stomach, Inflammation (Cont'd).

The affection is manifested by loss of both appetite and thirst, restlessness, swollen abdomen, constipation, etc.

Warm mashs should be given as food and warm linseed meal water be given in place of cold water to drink. Purgatives containing oil should be given, also enemas, and the belly should be rubbed with stimulant applications. The animal should also be bled.

The following may also be administered:

I.

Salicylic acidgr. 90

Infusion of chamomile

(1 in 10).....fl.oz. 32

Sodium sulfateav.oz. 10

Linseed oilfl.oz. 26

Administer 1 pint every hour until constipation is overcome.

II. As an enema, mix 1½ ounces of salt and 3 fluidounces of raw linseed oil with a quart of soap water and inject every 3 hours until the bowels are relieved.

III. Application:

Linseed oil, raw.....fl.oz. 4

Ammonia waterfl.oz. 4

Oil of turpentinefl.oz. 4

Rub the abdomen with this every 3 hours.

Tetter or Ringworm.

Tetter usually attacks old, underfed animals where stalls are poorly ventilated and unclean.

The stalls must first of all be thoroughly cleaned, aired and whitewashed with lime, and the affected parts of the animal treated with the following:

Green soapav.oz. 10

Waterfl.oz. 10

Pine tarav.oz. 5

Heat in a water bath until of a uniform consistency.

Wash the entire body of the animal every 2 days with warm green soap solution (1 to 20), rinse with warm water and when the animal is dry rub the above ointment well in under the hair.

The U. S. Bureau of Animal Industry

directs this treatment: Remove all crusts by washing with soap and water, then apply acetic acid, sulfur ointment, tincture of iodine or citrin ointment once a day. Cleanse the stable and whitewash it to destroy the spores scattered by the crusts.

Texas or Tick Fever.

When the disease has broken out, all animals, the sick as well as the healthy should at once be removed to another non-infected pasture. While this may not cut short the disease, it may save the lives of some animals by removing them from the possibility of being attacked by more young ticks. Removal from infected pastures likewise prevents a second later attack in October or early in November, which is caused by another generation of ticks. It is true that sick native animals infect with a new generation of ticks the pasture to which they are removed, but these usually appear so late that they have but little chance to do any damage.

Medical treatment of the sick has generally been unsatisfactory except in chronic cases and those occurring late in the fall. If the animal is constipated, a drench consisting of 1 pound of epsom salt in a quart of water may be administered, followed by 30 to 90-grain doses of quinine sulfate, according to the size of the animal, 4 times a day, until the system is well saturated with it. Tincture of digitalis, 4 fluidrams, and whiskey or alcohol, 2 fluidounces, may be combined with the quinine, according to indications of individual cases. The following tonic should be used in the convalescent stage when the fever has run its course:

Reduced ironav.oz. 2

Nux vomicaav.oz. 2

Rhubarbav.oz. 2

Gentianav.oz. 2

Potassium nitrateav.oz. 6

Reduce all to powder and mix well.

Give a heaping tablespoonful in the feed 3 times a day.

The animal should be given a nutritious laxative diet with plenty of clean and cool drinking water.

Experiments have been made by the U. S. Bureau of Animal Industry with regard to freeing cattle from ticks. When the herd is small, a very effective but laborious method is to pick off these parasites by hand or to scrape them off with a dull knife or currycomb. This should be done at least three times a week in order to find all the adults before they mature and drop off. After removing the ticks, they should be destroyed, preferably by burning.

Greasing the legs and sides of cattle with cotton-seed oil, fish oil or crude petroleum will assist in preventing the ticks from crawling up on the body. In small herds, smearing the cattle with a mixture of 1 gallon of cotton-seed oil, 1 gallon of kerosene and 1 pound of sulfur, or with a mixture of equal parts of cotton-seed oil and crude petroleum has proved efficacious when applied to the skin 2 or 3 times a week during the tick season.

Throat, Inflammation of.

Inflammation of the throat usually results from a "cold." The affected animal does not swallow readily, liquids flowing out again through the nostrils, it coughs a great deal, and respiration is short and labored. The affection usually lasts 6 to 8 days. Treatment consists in making stimulating applications, such as liniments or baths or ointments.

I.

Ammonia linimentfl.oz. 8
Oil of turpentine.....fl.oz. 8
Rub the throat 3 times daily with this mixture and then bind with flannel.

II.

Alumdr. 6
Salicylic acidgr. 24
Honeyav.oz. 1
Diluted acetic acid.....fl.oz. 2
Waterfl.oz. 30
Mix and dissolve.

Warm the solution and inject into the mouth every half hour. Or a linen

cloth moistened with this solution may be employed to wash out the mouth.

Thrush in Calves.

It will be observed that the calf is disinclined to suckle its mother's teats. Upon examination of the mouth, the canker spots will be noticed. Treatment consists in washing out the mouth every 2 hours with fresh water, then applying the below mentioned lotion and giving the powder.

I.

Alumdr. 2½
Honeydr. 6
Infusion of sage (1:10).....fl.oz. 7½
Mix and dissolve.

Wash the mouth thoroughly every 2 hours with fresh water, then apply this solution.

II.

Rhubarbdr. 3
Prepared chalkav.oz. 1
Mix and divide into 3 powders.

Give 1 powder every morning in some milk.

Tympanitis Remedies.

Tympanitis is the sudden production of a large amount of gas in the first stomach of the cow, which causes enormous distention of the abdomen, owing to failure of the gas to be discharged by the mouth or anus. It appears most frequently in animals which have just been turned out to green pasture in consequence of which they eat too greedily and hastily. The disorder comes on rapidly and if not quickly relieved may prove fatal. If the gas has accumulated within the course of half an hour the speediest and surest way to gain relief is to puncture the rumen with a trochar. Evacuation of gas through the œsophagus is accomplished by pulling the tongue out of the mouth or by traction upon the commissures of the lips by means of a knotted straw rope; this gives rise to involuntary movements of the tongue which produce eructations and sometimes vomiting. The rectum should be emptied by means of the oiled

Tympanitis (Cont'd).

hand, after which enemas of soap water should be injected and one of the following drenches administered:

I.

Potassium sulfidav.oz. 2
Rye flourav.oz. 2
Lime waterpints 4
Give 1 pint at a dose every ½ half.

II.

Ammonia waterfl.oz. 1½
Rye flourav.oz. 2
Lime waterpints 3
Use like the preceding.

III.

Aromatic spirit of
ammoniafl.oz. 2
Tincture of capsicum.....fl.dr. 2
Tincture of ginger.....fl.oz. 1
Waterfl.oz. 16

Give at 1 dose. This may be repeated in half an hour if no relief is obtained, and if failing to relieve in another half hour, resort should be had to the trochar.

IV. Tympanitis may become chronic so that the animal bloats up after each feeding but not enough to cause alarm. Treatment should be commenced by giving this cathartic mixture:

Epsom or glauher's salt....av.lb. 1
Ginger, powderav.oz. 1
Barbadoes aloesav.oz. ½
Molassespint 1
Water, lukewarm.....quarts 2

Mix the solids with the water and add the molasses.

After purgation, the following tonic and antacid should be given to promote digestion:

Gentianav.oz. 3
Potassium bicarbonateav.oz. 3
Gingerav.oz. 3
Capsicumav.oz. 1

Reduce all to powder, mix well and divide into 12 powders.

Give 1 powder 3 times a day before feeding, mixed with a half pint of whiskey and a pint of water. It is also of advantage in such cases to give two heaping teaspoonfuls of wood charcoal, mixed with the animal's food, 3 times a day. If the dung is hard, the constipa-

tion should be overcome by feeding a little flaxseed twice daily or giving a handful of glauher's salt in the feed once or twice a day. Roots, silage and other succulent foods should also be given.

Udder, Inflammation of.

Inflamed udder may result from injury or from cold, or as a result of other diseases. In the first stages the milk appears normal, subsequently becoming thick and even purulent or bloody.

Treatment consists in gently evacuating the udder mornings and evenings, and limiting the animal to half rations, which should consist of easily digestible food. The udder should be bathed in warm water after milking, and after drying an antiseptic application should be made. If the udder is hot and feverish, the application should contain mercurial ointment. Saline purgatives should be administered internally.

I. This is for use in the early stages:

Salicylic aciddr. 1
Camphorated oilfl.oz. 4
Rub the udder carefully twice daily.

II. To use when the udder is feverish:

Salicylic acidgr. 40
Mercurial ointmentav.oz. 1
Camphorated oilfl.oz. 3
Apply like the preceding.

Urine Bloody.

This is generally brought about by eating sour food or such as contain oxalates, either fresh or dried, which is generally the cause to be looked for.

Treatment consists in changing the food. If the disease has been contracted while grazing, change to hay, or if it has been contracted from hay, place the animal at pasture or give it green food. If the change of food alone proves insufficient then use the following:

Lead carbonategr. 45
Sodium acetatedr. 2½
Camphor, powderdr. 4
Precipitated chalkav.oz. 4
Mix and divide into 6 powders.

Give 1 powder in a quart of bran mash morning and evening.

The U. S. Bureau of Animal Industry states that treatment must vary according to the cause. If due to an irritant, a saline purgative, say 1 to 1½ pounds of glauher's salt, will clear the irritants from the bowels and allay the fever. It will also serve to divert to the bowels much of the irritant products already absorbed into the blood and will thus protect the kidneys. In many such cases a liberal supply of wholesome, easily digestible food will be all the additional treatment required. Demulcent food, such as boiled flaxseed or wheat bran, is especially good. If much blood has been lost, bitters and iron, such as gentian, 4 drams, ferrous sulfate, 2 drams, should be given every day for a week.

For cases in which excess of diuretic plants have been taken, the "salts" should be replaced by a pint or two of olive oil, adding 1 ounce of tincture of opium and 2 drams of gum camphor. In cases due to sprained or fractured loins, to inflamed kidneys, or to stone or gravel, the treatment will be as far as possible for the particular ailment.

Worm Remedies.

Worms are readily produced by insufficient feeding, and are expelled by purgative worm medicines. It is important to give the animal but little food on the day previous, and to administer the worm medicine and the purgative at the same time.

Wormwood, powder	av.oz.	1
Tansy, powder	av.oz.	1
Aloes, powder	av.oz.	1
Dippel's oil	fl.dr.	4
Linseed oil, raw	fl.oz.	16

Give in 2 doses, with an interval of 5 hours.

The U. S. Bureau of Animal Industry recommends as treatment for the twisted wireworm a drench of a 1% solution of coal-tar creosote in water, of which 1 dose will usually be sufficient, or gasoline of which 4 to 6 doses will be required. The doses will vary according to the age of the animal, of the creosote

solution from 8 ounces to a quart, of the gasoline, ½ to 1½ fluidounces.

For the encysted stomach worm there appears to be no successful treatment. Tape worms are frequent in cattle, but they appear to do no particular harm.

If in addition to the twisted wire worms, the animals are suffering from a severe infection of bowel worms, such as hookworms, to each dose of creosote solution should be added 30 to 80 grains, or even 100 grains, of thymol. The above remedies, creosote solution and gasoline, are equally suitable for sheep, but using smaller doses.

Wounds, Treatment of.

Animals may be wounded in various ways, as by barb-wire fences, by blows, by being gored by other animals, etc. If the wound is large and open it must be sewed up. After-treatment of the wound is of great importance. Formulas are given in this Division under Ointments and Liniments for preparations that may be used as dressings or applications.

The first treatment of every wound is a thorough cleansing. This may be accomplished by allowing water containing 2% of carbolic acid to flow over it and picking out all foreign matter, dirt, straw, oats, etc. When the wound and adjacent parts are cleansed, dress with "white lotion" (Lotio Alba—see formula in Part I), or with a solution of 1 ounce of zinc chlorid to a quart of water. In cold weather the parts may be dressed with zinc salve.

In superficial excoriated wounds, a good dressing after the cleansing is iodoform in dry powder. This should be followed by a second dressing of powdered aloes, which not only forms an artificial scab but also keeps flies away, an important consideration in the treatment of wounds on animals.

There are several other applications which are efficacious, such as 1 in 800 corrosive sublimate solution, saturated solution of boracic acid, or 3% carbolic acid solution.

DIVISION III.—SHEEP MEDICINES.

Most of the remedies described under the preceding two sections are equally well adapted for sheep, providing they be full-grown animals. Lambs frequently require somewhat different treatment.

Anemia Remedies.

Anemia may be cured if the animal is promptly treated in the early stages of the disease. Good feeding and care is as essential as medicine. The animal should be kept in a warm stall except in pleasant days when it may go out to pasture. It should receive the best of food and drink, and also be given one of the following:

I.

Juniper berries, crushed.....av.lb. 2
Sodium chloridav.lb. 2
Ferrous sulfateav.oz. 1

This is to be mixed with 12 gallons of the animal's mashes, and the dose is to be repeated once a week for at least 12 weeks.

II.

Juniper berries, crushed.....av.lb. 2
Calamus, powderav.lb. 2
Sodium chloridav.lb. 2

To be mixed with the animal's fodder once a week.

Colic Remedies.

Colic may result from exposure to cold, from constipation, from overfeeding, or from worms. It is generally accompanied by retention of urine and usually by constipation.

If the ailment is due to cold, warming or stimulant remedies should be given, if due to overfeeding or constipation, give a purgative. In either case, keep the animal warm, make stimulant applications, and give an enema.

I. This mixture is useful in the treatment of colic resulting from cold.

Capsicumgr. 30
Gingergr. 120
Peppermintgr. 150
Linseed meal.....gr. 150
Sodium sulfate.....av.oz. 2

Reduce all to powder, mix well, and divide into four portions.

Give 1 powder every hour in a cupful of warm coffee or warm beer.

II. This preparation is advised when the colic is the result of overfeeding.

Castile soapdr. 1
Fenneldr. 2
Linseed mealdr. 2
Chamomiledr. 2
Sodium sulfateav.oz. 3

Reduce all to powder, mix well, and divide into four portions.

Every 2 hours, mix one powder with a cupful of warm water, add a tablespoonful of linseed oil, and give the mixture to the animal.

III. For enema.

Castile soap.....gr. 75
Sodium chloridav.oz. 1½
Mix and divide into 5 powders.

One powder is to be mixed with 8 fluidounces of infusion of chamomile and used as an enema, which is to be repeated every hour.

Constipation Remedies.

Constipation of sheep may result from difficultly digestible food, and may also result from a sudden change of food.

Treatment consists in giving sodium sulfate internally as well as enemas.

I.

Carawaygr. 150
Sodium bicarbonate.....gr. 150
Linseed meal.....gr. 300
Sodium sulfate.....av.oz. 2½

Mix all in powder form and divide into three portions.

Stir one into 8 fluidounces of warm water, add about one-half cupful of linseed oil, and give at one dose; repeat every 3 hours.

II.

Castile soap, powder.....gr. 75
Rye flour.....av.oz. 1½
Mix and divide into five portions.

Stir one powder in 8 fluidounces of warm water and give as an enema every hour.

Diabetes, Treatment for.

Diabetes usually affects whole flocks of sheep. It is caused by exposure to prolonged cold and damp weather, also by eating some kinds of leaves and twigs. Treatment consists in keeping the animals in warm stalls and giving one of the following remedies.

I.

Camphorav.oz. 2
 Aloesav.oz. 2
 Rye flour.....av.oz. 1
 Linseed oil, raw.....fl.dr. 4

Make into a soft paste or electuary by suitable means. Give to each affected animal, a piece about the size of a hazelnut, smearing it on the tongue. Repeat the dose every day until a cure is effected.

II.

Alumav.oz. 6
 Iron sulfateav.oz. 6

This is to be dissolved in the animals' drink. This amount is to be used with 15 gallons of water.

Diarrhea Remedies.

This affects old as well as young animals and is dangerous when long-continued. It may be caused by exposure to cold or by change from dry to green fodder, or by feeding partially decomposed fodder.

I. This is best adapted to older animals.

Gingerdr. 2
 Wormwooddr. 2
 White or red oak bark.....av.oz. 1
 Juniper berriesav.oz. ½
 Sodium chloridav.oz. 5

All should be in powder and be well mixed.

One tablespoonful should be given 3 times daily in food.

II. This is best adapted to lambs:

Tannic acidgr. 45
 Rhubarbav.oz. 1
 Prepared chalkav.oz. 1
 Rye flourav.oz. 1
 Calamusav.oz. 3

All should be in powder, be well mixed, and be converted into an electuary by the addition of mucilage or syrup.

A piece the size of a hazelnut should be given mornings and evenings.

Eye Inflammation.

Inflammation of the eyes in both lambs and sheep may be of catarrhal-rheumatic character or be due to mechanical injury. The eye should be protected from drafts and should be bathed twice daily with water after which one of the liquids mentioned below should be used. It is also advisable to administer a mild cathartic.

I.

Tincture of opium.....drops 10
 Lead waterfl.oz. 2
 Bathe the eye twice daily.

II.

Zinc sulfategr. 5
 Mucilage of quince seed....fl.oz. 1
 Distilled waterfl.oz. 1
 Mix and dissolve.
 Use like the preceding.

Foot Rot, Treatment for.

Foot rot in sheep is very common. In treating it the dead loosened portions of the hoof should be pared away with a sharp knife, and all dirt should be carefully removed before making any applications.

A mixture of equal parts of solution of antimony chlorid and tincture of myrrh is recommended as a daily dressing; also a solution of 1 av. ounce each of alum and iron sulfate in a pint of water. Dip tow in this liquid, place it in the wound and then cover with dry tow.

The U. S. Bureau of Animal Industry directs that the foot be carefully cleaned and every portion of detached horn be cut away. Should there be fungoid granulations, these should be removed with a knife or a pair of curved scissors. All clippings and trimmings that are removed from diseased feet, whether composed of bits of horn, shreds of tissue or fungoid growths, should be carefully gathered up and burned or disinfected, as they may serve to spread the disease further if left where other sheep may come in contact with them. After

Foot Rot, Treatment for (Cont'd).

trimming the feet, stand the sheep for 10 minutes in a solution of copper sulfate made from 3 pounds of this salt to 5 gallons of water. The solution when used should be as warm as can be borne by the hand. The bath should be repeated if necessary.

It sometimes happens that the disease assumes an aggravated form in several of the sheep, involving the deeper tissues and necessitating the application of dressings. In such cases all the loose and diseased tissues should be cut away and the affected parts washed thoroughly with a 5% solution of carbolic acid, then the below-mentioned antiseptic astringent powder should be dusted on and a bandage applied.

Tannic acid	gr. 75
Carbolic acid	gr. 150
Exsiccated alum	av.oz. 8

The verdigris ointment mentioned under Foot Rot, Remedies for, in Division II, may also be used for sheep.

Goitre, Remedies for.

Iodids in conjunction with mercurial ointment and salicylic acid is the usual application as indicated in these two formulas.

I.

Potassium iodid	av.oz. $\frac{1}{2}$
Water	fl.oz. $\frac{1}{2}$
Mercurial ointment	av.oz. 4

Apply once daily to the swelling.

II.

Salicylic acid	gr. 45
Potassium iodid	av.oz. $\frac{1}{2}$
Water	fl.oz. 2
Simple cerate	av.oz. 2

To be used like the preceding.

Insects, To Prevent Attacks of.

Sheep are annoyed a great deal with insects, especially flies. Mercurial ointment is an excellent repellent for insects but, on account of its poisonous character is not to be recommended. The following is useful:

Naphthalin	av.oz. 1
Cottonseed oil	fl.oz. 2
Water	fl.oz. 2
Soft (or green) soap.....	av.oz. 5

This is to be applied as frequently as may be necessary.

Itching of the Skin.

Itching of the skin is caused by not sending the sheep to pasture. The ailment is neither dangerous nor contagious. Treatment consists in applying the following lotion and putting the animals to pasture.

Boric acid	gr. 75
Carbolic acid	m. 75
Water	fl.oz. 16

Mix and dissolve.

Apply this lotion once daily to the inflamed spots.

Mange Remedies.

See Scab, Treatment for.

Rheumatism Remedies.

Rheumatism is usually caused by exposure to cold; it manifests itself by limping and lameness. Treatment consists in keeping the animal warm, rubbing it well twice a day and bathing once daily with weak salt water. Cathartics should be given internally.

I. For bathing.

Rosemary herb, cut.....	av.oz. 4
Soda ash	av.oz. 16
Sodium chlorid	av.oz. 64

Mix the above with 12 gallons of hot water, allow to stand for 15 minutes, and use for bathing. The liquid may be used 2 or 3 times for a bath if warmed each time. It should be lukewarm when used.

II. For liniment.

Oil of turpentine	fl.dr. 4
Water of ammonia.....	fl.dr. 4
Spirit of soap.....	fl.oz. $7\frac{1}{2}$
Spirit of camphor.....	fl.oz. $7\frac{1}{2}$

Rub the legs with this mixture twice daily.

III. For a cathartic for full-grown animals.

Sodium sulfate	av.oz. $1\frac{1}{2}$
Aloes	gr. 80
Linseed oil, raw.....	fl.dr. 5
Decoction of linseed (1	
in 20)	fl.oz. 7

Mix and dissolve.

Give one-half at a dose and repeat in 3 hours.

IV. A cathartic for lambs.

Sodium salicylate	dr. 1
Aloes	dr. 6
Decoction of linseed (1 in 20)	fl.oz. 15

Mix and dissolve.

Give a teaspoonful 2 or 3 times daily, according to the age of the animal.

Scab, Treatment for.

Scab is one of the most dangerous of the parasitic diseases of sheep. It is due to a minute insect called *acarus*, about the size of a pin head, which bores into the skin, hatches and multiplies, the young spreading to other portions of the animal's skin, there to continue the same process.

Treatment consists of either rubbing poisonous ointments into the fleece by hand or by immersing the sheep in aqueous mixtures containing some ingredient which will kill the parasites. When any of the flock are infected, all should be dipped, preferably being first sheared if the season permits it.

Instead of treating the scab by one application, some authorities advise the use of a preliminary dip of alkaline water to soften the scabs, or of oil or glycerin well rubbed in for the same purpose. This is to be followed in 2 or 3 days by a poisonous dip. Nearly all advise that the scabs be rubbed with a stiff brush while the sheep is being dipped.

The quantity of dip required for each sheep is variously estimated at from 1 quart to 1 gallon. For small numbers of sheep, say, 50 to 100, the larger amount is necessary, while for large flocks, 1 quart for shorn or 2 quarts for unshorn sheep may be allowed. The dip should be kept while in use at a temperature of from 100 to 110° F. The sheep should be dipped again within some 6 or 10 days of the first dipping in order to kill before their maturity any parasites which may have developed from eggs which were left upon the animal at the time of the first treatment, as the

dip does not destroy the vitality of the eggs.

The chief poisons used in the dip are tobacco, arsenic and carbolic acid. Of these, tobacco is the favorite, because its use has not been followed by the fatality that has in times past followed the use of arsenic. Carbolic acid is too expensive to be used in large quantities, but is an excellent ingredient when only a few sheep are to be treated. The addition of tar to the dips serves a good purpose, as it is not only healing, but serves an excellent purpose in driving away flies.

The following three formulas are recommended by the U. S. Department of Agriculture. They are stated to be rather prophylactic in character and are used generally after shearing.

Carbolic Acid Dip.

Soap	av.lb. 1
Crude carbolic acid.....	fl.oz. 16
Water	gal. 50

Dissolve the soap in a gallon or more of boiling water, add the acid and stir thoroughly. Any kind of soap may be used, such as laundry soap or soft soap.

Keep the mixture well thinned in using and do not let it get into the mouth, nostrils or eyes of the sheep. Hold each sheep in the bath not less than half a minute.

Kerosene Emulsion Dip.

Fresh skimmed milk.....	gal. 1
Kerosene	gal. 2

Churn together till emulsified, or mix and put into the mixture a force pump and direct the stream from the pump back into the mixture. The emulsion will take place more rapidly if the milk be added while boiling hot. Use 1 gallon of this emulsion to each 10 gallons of water required.

Kerosene Soap Dip.

Soap	av.oz. 16
Water	gal. 1
Kerosene	gal. 2

Bring the water to a boil and dissolve the soap in it; then add the kerosene

Sheep Dip (Cont'd).

and churn until emulsified. Use 1 gallon of this emulsion to 8 of water.

Texas Tobacco Dip.

Tobacco	av.lb.	30
Sulfur	av.lb.	7
Concentrated lye	av.lb.	3
Water	gal.	100

Steep the tobacco in three successive portions of water, expressing each time; then add the other ingredients to the liquor, and stir well while in use.

Law's Sheep Dip.

Tobacco	av.lb.	16
Oil of tar	fl.oz.	48
Soda ash or caustic soda	av.lb.	20
Soft soap	av.lb.	4
Water	gal.	50

Steep the tobacco as in the previous formula, and add the other ingredients to the liquor.

Zundels' Carbolic Dip.

Crude carbolic acid	av.lb.	3
Unslaked lime	av.lb.	2
Potash or lye	av.lb.	6
Soft soap	av.lb.	6
Water	gal.	70

Mix and boil.

Kaiser's Carbolic Dip.

Tobacco	av.lb.	13½
Soda ash or caustic soda	av.lb.	8
Soft soap	av.lb.	8
Freshly slaked lime	av.lb.	4
Crude carbolic acid	av.lb.	4
Water	gal.	66

Infuse the tobacco in the water, strain, and to the infusion add the remaining ingredients.

The carbolic acid should contain 50% phenol.

The following arsenical preparations are in favor in England:

Arsenical Sheep-Dip Paste.

(Finlay Dunn.)

Arsenic	av.lb.	2
Pearlash	av.lb.	2
Soft soap	av.lb.	2
Sulfur	av.lb.	2

This is sufficient for 125 gallons of water.

Arsenical Sheep-Dip Paste.

(Prof. Simonds.)

Arsenic	av.lb.	1
Soft soap	av.lb.	1
Potassium carbonate	av.oz.	8
Water	gal.	4

Boil the arsenic and potash together in half the water, and dissolve the soap in the other half. This is sufficient for 20 sheep. It should be used warm.

While the last two preparations are efficacious they are not recommended on account of their poisonous nature and unless special precautions can be taken to avoid contaminating the pastures or otherwise poisoning the animals.

Lime and Sulfur Dip.

The following three formulas for sheep dips have been approved by the British Board of Agriculture:

Mix 25 pounds of sulfur with 12½ pounds of good quicklime. Triturate the mixture with water to a smooth cream and transfer this to a boiler of 20 gallons capacity. Make up the volume with water to 20 gallons, boil and stir during half an hour, when the liquid should have a dark red color. If yellowish, continue the boiling until the dark red color is obtained, keeping the volume at 20 gallons. When the liquid has cooled decant off from any small quantity of insoluble residue and make up the volume to 100 gallons with water.

Carbolic Acid and Soft Soap Dip.

Dissolve 5 pounds of good soft soap, with gentle warming, in 3 quarts of good crude carbolic acid. Mix the liquid with sufficient water to make 100 gallons.

Tobacco and Sulfur Dip.

Steep 35 pounds of finely ground offal tobacco in 21 gallons of water for 4 days. Strain off the liquid and remove the last portions of extract by pressing the residual tobacco. Mix the whole extract and to it add 10 pounds of sulfur. Stir the mixture well to secure an even admixture and make up the total bulk to 100 gallons with water.

Scurvy, Remedies for.

This frequently affects young merino lambs and is due to some deficiency in the mother's milk. The lamb refuses to take nourishment, white canker spots appear both internally and externally and the gums become blue. Treatment consists first in proper feeding of the mother sheep, such as going out to green pasture and giving the lamb the following mixture:

Hydrochloric acidfl.dr. 3
 Infusion of angelica (1:-
 20) to make.....fl.oz. 8

Give a tablespoonful twice daily.

The sick animals must be fed by pouring the milk into their mouths. The canker spots should be treated as described under Thrush, Remedies for, No. III.

Tape Worm Remedies.

See Worm Remedies.

Thrush, Remedies for.

Thrush in lambs is due to some disturbance of nutrition. The treatment consists in giving the mother sheep a purgative, and to the lamb a mild alkaline laxative, also washing its mouth with water containing a small amount of vinegar and subsequently applying the lotion mentioned below.

I. Purgative for the mother sheep:

Sodium sulfateav.oz. 2½
 Sodium bicarbonatedr. 2½
 Sodium chloriddr. 2½
 Gentiandr. 2½

Reduce all to powder and mix well.

Mix this with a pint of water, give one-half of it at a dose and the remainder in 2 hours.

II. Laxative for the lamb:

Rhubarb, powderdr. 1
 Magnesium carbonatedr. 2

Give as much as will lie on the point of a knife 3 times a day in water.

III. Application to the canker spots:

Borax, powderdr. 3
 Honeyav.oz. 2
 Tincture of myrrhfl.dr. 3
 Peru balsamm. 90

Rub the borax with the honey and incorporate the other ingredients.

Wash the growth out 5 or 6 times daily with fresh water, then apply this preparation. This should be well shaken before using.

Tympanitis Remedies.

See Tympanitis Remedies, Division II, for description of causes and symptoms. As in cattle the attack must be immediately relieved as otherwise it proves fatal. The following remedy is recommended:

Ammonia waterfl.dr. 4
 Spirit of soap.....fl.oz. 3½

Give a tablespoonful in a cup of milk every 15 minutes. If this fails to relieve, then puncture the stomach with a trochar as described under Cattle Medicines.

Urine, for Retention of.

Retention of urine may be caused by a "cold" but may also be due to stone in the bladder. If caused by the latter, operative measures are necessary; if by the former, the following may be used:

Hemp seed.....av.oz. 2
 Magnesium sulfate.....av.oz. 1
 Juniper berries.....av.oz. ½
 Rye flour.....av.oz. ½
 Bitter almonds.....gr. 90

Reduce all to powder, mix and make an electuary by the addition of water or syrup.

A piece the size of a marble may be given once daily.

Urine, for Bloody.

This condition may be caused by acids or by oxalates in the fodder.

The animals should be placed in a warm stall and fed with wholesome food, either dry or green. The following may also be given:

Lead carbonateav.oz. ½
 Camphorav.oz. ½
 Bitter almondav.oz. 1
 Linseed mealav.oz. 3
 Rye flourav.oz. 5

All should be reduced to powder and be made into a stiff mass with syrup or molasses.

A piece the size of a hazelnut should be administered once daily.

Womb, for Inflammation of.

Inflammation of the womb of sheep is infectious and affects sheep either before or after giving birth. If the former, the foetus dies and quickly decomposes. The vaginal orifice then becomes red and inflamed and from it oozes a foul-smelling fluid. To avoid this condition it is recommended to apply the salve (No. I) to the mouth of the womb to remove the foetus, and then use anti-septic douches for the vagina. Internally give the preparation mentioned below (No. II).

I.

Extract of henbane.....dr. $2\frac{1}{2}$
 White of egg.....dr. $2\frac{1}{2}$
 Larddr. $2\frac{1}{2}$

Make a salve, which is to be applied every 2 hours to the mouth of the womb.

II.

Bitter almondgr. 75
 Sodium salicylategr. 150
 Magnesium sulfateav.oz. 2
 Decoction of linseed (1:-
 10)fl.oz. 6

Give a tablespoonful every 2 hours.

Worm Remedies.

For tape worms, use the following:

Aloesgr. 150
 Oleoresin of male fern.....gr. 30
 Naphthalingr. 3

Make into a mass with spirit of soap and divide into 2 pills.

The dose for a lamb, 4 to 8 months, is 1 pill given in the morning without giving food; the other pill should be given 8 days thereafter. The dose for lambs only is given, as full-grown animals are rarely affected.

For remedies for twisted wire-worms and hook-worms, see Worm Remedies in Division II.

DIVISION IV.—SWINE MEDICINES.

Many of the remedies mentioned under the sections relating to horses and cattle may also be used for the treatment of pigs.

Appetite, Loss of, For.

Loss of appetite may be indicative of other diseases, but may also be the result of overfeeding or due to the presence of undigested food.

Treatment consists in changing the food, giving an emetic, and subsequently the powder mentioned below.

I. Give at one dose as an emetic:

Tartar emeticgr. 15
 Ipecac, powdergr. 45
 Althæa rootgr. 75

Mix and make into an electuary by means of syrup, molasses or mucilage.

II.

Calamusav.oz. 1
 Gentianav.oz. 1
 Black antimonyav.oz. 1
 Sodium bicarbonateav.oz. 5
 Sodium chloridav.oz. 5
 Sodium sulfateav.oz. 5

Mix all and reduce to powder.

Give a tablespoonful twice daily.

Catarrh Remedies.

Catarrh in pigs is usually due to "cold" caused by rapid changes of temperature such as occur in the spring or autumn. The animals have diminished appetite but increased thirst, and the eyes and mucous membrane of the mouth are inflamed. From the nose flows a secretion, watery at first, later becoming mucous, and the animals cough violently. Generally the affection subsides of itself. If there is an accompaniment of fever, cathartics containing antifebrile agents, or emetics, should be administered.

I.

Ammonium chloridav.oz. $\frac{1}{2}$
 Black antimonyav.oz. $\frac{1}{2}$
 Argols (crude tartar).....av.oz. 1
 Licorice rootav.oz. $2\frac{1}{2}$
 Linseed mealav.oz. $2\frac{1}{2}$

Mix in powder and add syrup to form an electuary.

Give a piece about the size of a walnut 3 times daily.

II. Emetic:

Tartar emeticgr. 15
 Ipecac, powdergr. 45

Mix with syrup or honey and administer to the animal by smearing the whole on the tongue.

Colic Remedies.

Colic may result from eating difficultly digestible food or poisonous plants, from exposure to cold, or from worms.

Treatment consists in keeping the animal in a warm stall, administering aromatic, stimulating and purgative remedies, and giving enemas every half hour.

I.

Sodium sulfateav.oz. 1½
 Peppermintav.oz. ½
 Sodium chloridgr. 150

Reduce all to powder and mix well.

Give one-half of this mixture in 8 fluidounces of weak coffee and repeat the dose in 3 hours.

II. For enema:

Chamomileav.oz. ½
 Peppermintav.oz. ½
 Green soapav.oz. 2½
 Linseed oil, rawfl.oz. 2½
 Water, boilingfl.oz. 48

Pour the water upon the chamomile and peppermint, let stand for 15 minutes, strain, and add to the colature the remaining ingredients.

Inject 8 fluidounces of this mixture, previously warmed, into the rectum every half hour.

If the colic is caused by worms, a vermifuge should be administered to avoid the attacks of colic. See Worm Medicine.

Diarrhea Remedies.

Diarrhea may result from exposure to cold or from disorders of digestion. If it continues more than 24 hours, treatment is urgently demanded, as it may become severe. The animal should be kept warm, and astringent and aromatic remedies may be given, and possibly suppositories may be required.

I.

Ferrous sulfategr. 40
 Alumgr. 40

Sugar of milk.....gr. 300
 Acaciagr. 400

Mix all in powder and divide into 5 parts.

Give 1 powder in a cupful of warm chamomile tea or other suitable vehicle every 3 hours.

II.

Rhubarbgr. 15
 Calcium carbonategr. 150

Mix in powder and divide into 10 portions.

One portion is to be given twice daily in a tablespoonful of warm chamomile tea or other suitable vehicle. This remedy is intended for suckling pigs.

Eye, Inflammation of the.

Inflammation of the eyes occurs frequently in young pigs and may be caused by other ailments or by mechanical injury.

Wash the eye 3 times daily with lukewarm water and use the following eye waters:

I.

Zinc sulfategr. 10
 Tincture of opium.....m. 20
 Infusion of chamomile (1
 in 50)fl.oz. 4

II.

Ammonium chloridgr. 18
 Lead waterfl.oz. 4

Founder, Remedies for.

Founder is of rheumatic origin and is accompanied by disorders of digestion. The animal walks stiff, has pain in its limbs, appetite is lessened, the feces are dark and hard, and the urine is yellowish-brown. Treatment consists in rubbing the animal, giving an emetic, and, several hours after this has acted, a purgative. To the legs apply counter-irritants.

I. To produce vomiting:

Copper sulfategr. 15
 White helleboregr. 30
 Sugargr. 75
 Reduce all to powder and mix well.
 Give at one dose on the tongue.

Founder (Cont'd).**II. Purgative:**

Sodium nitrate	gr. 80
Gentian	dr. 2½
Linseed meal	dr. 5
Sodium sulfate	av.oz. 1½

Give one-half in a pint of warm water and the remainder in 3 hours.

III. Application:

Cantharides, powder	av.oz. ½
Euphorbium, powder	av.oz. ½
Salicylic acid	av.oz. ¼
Suet	av.oz. 1
Sweet oil	av.oz. 1
German soft turpentine.....	av.oz. 1½

Mix together and keep at a gentle heat for an hour.

Rub the animal's legs up to the shoulders and thighs once a day for two successive days.

Hog Cholera Remedies.

Hog cholera, swine fever and swine plague are the names applied to a group of symptoms produced by three distinct types of disease, namely, charbon, contagious pneumo-enteritis and epizootic catarrh, all, however, dependent upon recognized specific germs. The second form, pneumo-enteritis, probably is the one most commonly understood, and it is characterized by an inflamed, ulcerated condition of the alimentary tract, and fetid, bloody discharges—these having determined the popular designation of "cholera."

As soon as an animal develops symptoms of the plague it must be isolated from the herd and surrounded by absolutely antiseptic conditions. Constipation, if present, should be relieved by castor oil or rhubarb. The bowels should be frequently irrigated with warm water; one of the below-mentioned prescriptions should be administered; the food should be restricted to well-cooked oat or barley meal gruel, or, if this is not borne, boiled corn starch. Some advise putting a trace of sulfuric acid into the drinking water. For the fever potassium nitrate usually is resorted to.

In the convalescent stages tonics must be administered.

When the disease is fully developed there is little hope and the animal should be killed and buried with quicklime. In England swine fever comes under the contagious diseases act, and treatment is not permitted. The public health authorities must be advised, who destroy the infected animal.

Prophylaxis consists in keeping the animal in perfect health by insuring proper hygienic food and surroundings. One of the principal, if not the main, cause of the disease is excessive feeding of corn. Corn-fattened animals are not in a physiological condition, as is well understood, and corn, principally consisting of starch, being particularly prone to fermentation, naturally must favor development of fermentative diseases in debilitated organisms. Hence corn should largely be replaced by the grains, bran, peas, beans and other nitrogenous foods, which will produce more muscle and less unhealthy fat. Decaying and fermenting food should not be offered under any condition. Clean, ventilated stalls that will afford protection against inclement weather, but also plenty of exercise in the open air, are prerequisites.

Prophylactic treatment consists in the daily administration of wood or animal charcoal or iron sulfate. Potassium chlorate is also recommended. In fact, experience teaches that the two latter agents are the only ones which proved effective for this purpose or in treating the initial stages of the disturbance. A few methods of treatment are here given.

I.

Arsenic	av.oz. 1
Black antimony	av.oz. 4
Potassium nitrate	av.oz. 4
Ferrous sulfate	av.oz. 16
Sulfur	av.oz. 16
Madder	av.oz. 16

Mix with 12 gallons of slop, and give 1 pint to each hog, the whole being for fifty.

II.

Capsicum	av.lb.	1
Ferrous sulfate	av.lb.	2
Madder	av.lb.	2
Calcium phosphate	av.lb.	5
Wood ashes, sifted.....	av.lb.	10

This may be administered in the same quantity as the foregoing.

III.

Iron carbonate	av.oz.	5
Sodium chlorid	av.oz.	5
Potassium carbonate	av.oz.	5
Sulfur	av.oz.	5
Lime	av.oz.	5
Carbolic acid	fl.oz.	5
Magnesium carbonate	av.oz.	10
Soap	av.oz.	10

Mix well and reduce to powder.

One-fourth av. ounce should be given at each meal, mixed with the food.

IV.

Wood charcoal	av.oz.	4
Sulfur	av.oz.	4
Sodium sulfate	av.oz.	4
Black antimony	av.oz.	4
Sodium chlorid	av.oz.	8
Sodium bicarbonate	av.oz.	8
Sodium hyposulfite	av.oz.	8

Reduce all to powder and mix well.

A large tablespoonful for each 200 pounds of animal should be given once daily with food.

This is recommended by the U. S. Department of Agriculture. It is said even to be a preventive of hog cholera.

V. The following are the U. S. Patent Office specifications for a medicine for the cure of hog and chicken cholera, the patent being granted in 1871:

To 5 gallons of water add 5 pounds of blackberry root. Let this boil thoroughly for 1 hour, after which take out the roots, and while the water is boiling add $\frac{1}{2}$ pound of bruised allspice, 1 ounce of tincture of iron, 1 ounce of asafetida, and $\frac{1}{2}$ ounce of gum camphor. Let it continue to boil about 20 minutes, then strain through a fine sieve, and then reduce the liquid by boiling to 1 gallon, which when cooled, may be bottled for use.

In administering to hogs, for every dozen hogs, take 5 gallons of scalded

bran slop and add 4 ounces of the medicine. This should be given every morning while threatened with the disease or while actually sick.

In administering to chickens or other fowl, for every dozen taken 2 quarts of corn meal, $\frac{1}{2}$ pint of lard and 3 tablespoonfuls of medicine.

Mange Remedies.

Pigs are occasionally affected by mange, the site of the affection being on the inner surface of the thighs and below the eyes. The animal tries to rub itself and then loses its bristles. The following application is advised:

Sulfurated potash, powder.....	av.oz.	1
Cottonseed oil	av.oz.	1
Soft (or green) soap.....	av.oz.	9

Mix well.

Apply this mixture to the affected spots, wash the animal in 2 days with warm water, and again apply this paste.

Milk Fever, Treatment for.

Milk fever is often caused by exposure to cold, but may be produced by other as yet unknown causes. The complaint is a serious one and must be treated in its early stages, otherwise it proves fatal.

Treatment consists in vigorous rubbing of the animal, giving enemas, and internally administering mild laxative and antifebrile remedies. The suckling pigs should be applied to the teats as frequently as possible.

I.

Magnesium sulfate	av.oz.	2
Potassium nitrate	dr.	2
Rye flour	dr.	2
Water	fl.oz.	4

Stir the solids with the water (cold), then heat to boiling, and allow to cool.

Give 2 tablespoonfuls every hour.

This is a laxative and antifebrile.

II. For enema:

Sodium salicylate	gr.	90
Egg yolk	gr.	30
Milk	fl.oz.	7

Divide into 2 parts to be given as enemas 2 hours apart. The liquid is to be warmed to 20 or 25 deg. C. before

Mange (Cont'd).

use. If there is no improvement in the condition of the animals, the enemas should be repeated.

Rickets, Treatment for.

Rickets may be due to deficiency of lime salts in the food, but may also be of congenital origin. If the animal is still suckling, calcium phosphate should be administered to the mother sow. If it has been weaned, the calcium phosphate should be mixed with its food. Under all circumstances, the animals should, whenever the weather permits, be in the open air as much as possible.

Swine Fever Remedies.

This disease, which is exceedingly contagious and is prevalent in many localities, is indicated by an increase in the temperature of the hog from 37° C., the normal temperature in health, to 40° C., sometimes rising as high as 41° C. The other symptoms are highly colored urine, cold extremities, loss of appetite and constipation. The following treatment is recommended:

A cathartic and diuretic should first be given, consisting of:

Potassium nitrate	av.oz. ¾
Sulfur	av.oz. 1
Magnesium sulfate	av.oz. 5
Molasses	av.oz. 2
Water, to make.....	fl.oz. 20

Mix the sulphur with the molasses, then add the water gradually, in which the salts have previously been dissolved.

Shake the mixture, and give 1 ounce every morning until relieved. This is the dose for hogs of average size; for larger animals the dose should be increased.

For diarrhea and weakness usually resulting from subsidence of the fever, the following mixture is administered:

Sodium bicarbonate	av.oz. 4
Gentian	av.oz. 4
Catechu	av.oz. 4
Cinchona	av.oz. 4
Reduce all to powder and mix well.	

From ¼ to 1 av. ounce of this powder should be given in food. Condition powders should be administered.

In diarrhea accompanied with an irritable or relaxed condition, the following is recommended:

Opium	dr. 1
Nutgall	dr. 2
Pimento	dr. 2
Sodium bicarbonate	dr. 2
Reduce all to powder and mix well.	

The dose is from 30 to 120 grains made into a bolus with molasses.

Vomiting, Remedy for.

Prepared chalk	gr. 75
Sodium bicarbonate	gr. 150
Sodium chlorid	gr. 150
Sodium sulfate	gr. 150
Linseed meal	av.oz. 1½
Mix well and divide into 5 powders.	

Give 1 powder every 3 hours in a cupful of warm chamomile tea or other suitable vehicle.

Worm Medicine.

Sodium sulfate, powder...	av.oz. 2
Tansy, powder	dr. 5
Castor oil	fl.dr. 6
Naphthalin	gr. 30
Rye flour	av.oz. ¾

Mix all and add syrup, glucose or molasses to form an electuary.

Give one-fourth of this mixture every 2 hours.

DIVISION V—DOG AND CAT MEDICINES.

The doses and quantities mentioned in the succeeding formulas are intended for dogs of medium weight—about 50 pounds. Larger animals will require proportionately larger doses and smaller ones smaller doses.

Many of the following remedies are

adapted for ailments of cats, the dose being somewhat less than for dogs. Pills and liquids are the best forms of medicines to administer to dogs, while powders and liquids are more suitable for cats.

In giving medicines to dogs, open the

mouth of the animal and place in it crosswise a small stick of wood, then thrust the pill, capsule or bolus down the throat with the finger; if a liquid, insert the neck of the bottle in the side of the mouth and hold the head back so as to compel the dog to swallow. When administering to cats, the powder is best blown through a glass or rubber tube onto the roof of the mouth; the liquid medicine is best poured upon the front paws, which the animal will lick off to clean them.

Appetite, Loss of.

Dogs are liable to overeating, and this may result in loss of appetite. Treatment consists in giving an emetic and following this with a purgative and stomachic mixture.

I. Emetic:

Tartar emeticgr. 5
White helleboregr. 2

Give this powder at one dose by placing it upon the tongue.

II. Stomachic and purgative:

Sodium bicarbonategr. 30
Rhubarbgr. 30
Calamusgr. 90
Sodium sulfate, dried.....gr. 90

Mix all in powder, make into a mass with syrup and divide into 6 pills.

One pill should be given twice daily.

Brain, Inflammation of.

Inflammation of the brain in dogs usually is caused by difficult teething, particularly the eruption of the back teeth, but may also be produced by external causes such as wearing a collar too tight which interferes with the circulation of the blood to the brain. Well-fed dogs which have little exercise, such as house dogs, are most subject to it. The stricken animal either lies in a stupor on its bed, has twitching of the limbs, inflamed eyes, feverish nostrils, little or no appetite, or it runs about hoarsely yelping, falls down in a fit, is inclined to bite, and has other symptoms of madness.

A veterinarian should be called in, as the treatment should begin with vene-

section. Applications of ice should be made to the head, a purgative should be given, also a hypodermic injection of morphine. Inasmuch as there is usually constipation an enema should be given every 2 hours. The disease is usually fatal, although there are some hopes of recovery.

I. Purgative:

Calomelgr. 3
Sugargr. 15

Mix well and divide into 2 powders.

Give 1 powder at once and the other in 3 hours.

II. Hypodermic injection:

Inject daily a solution of 1 grain of morphine sulfate or hydrochlorid until the paroxysms no longer occur.

III. For enema:

Green soapgr. 70
Spirit of camphor.....fl.dr. 3
Water, to make.....fl.oz. 8

Inject two fluidounces (cold) into the rectum every hour until the bowels are evacuated.

Canker of the Ear, Treatment of.

To effect a cure, treatment must be begun in the early stages of the disease. During treatment, the animal must be prevented from scratching the ear.

Treatment consists in the use of lotions, or, in later stages of the affection, ointments.

I.

Copper sulfategr. 36
Alumgr. 36
Waterfl.oz. 4
Mix and dissolve.

Wash the ear out 3 times daily with this liquid by means of a soft sponge.

II.

Silver nitrategr. 20
Glycerinfl.dr. 1
Distilled waterfl.oz. 2

Apply this liquid 3 times daily with a camel's hair pencil.

III.

Ointment of red oxid of
mercurydr. 4
Simple ceratedr. 4
Use like the preceding.

Catarrh Remedies.

Catarrh in dogs generally occurs from exposure to cold. A secretion flows from the nose, the breathing is labored, and there is fever. Treatment consists in keeping the animal warm, giving it hot inhalations (holding cloths wrung with hot water before its nose), and giving one of the remedies mentioned below.

I.

Potassium nitrategr. 30
Sodium salicylategr. 50

Dissolve this in such amount of water as the animal drinks in 24 hours.

II.

Syrup of senega.....fl.dr. 3
Solution of ammonium
acetatefl.dr. 3
Infusion of elder flowers
(1 in 20).....fl.oz. 5½
Give a tablespoonful every 3 hours.

Constipation Remedies.

Constipation may result from lack of exercise and may also be caused by eating indigestible foods, bones for example.

Treatment consists in giving an enema containing soap, and purgatives internally.

I.

Green soapdr. 2½
Linseed oil, raw.....fl.oz. 1½
Waterfl.oz. 15

Give one-fifth of this as an enema every half hour, until copious evacuation occurs.

II.

Calomelgr. 1½
Sugargr. 15
Give at one dose.

Consumption in Cats.

Cats are much afflicted with phthisis and the best remedy is cod liver oil in the form of emulsion. It is best given mixed with warmed milk, and should the animal refuse to lap it, administer it with a teaspoon, grasping the cat by the back of the neck, pulling the head up, and inserting the spoon in the mouth.

Cough Medicines.

Sometimes coughs occur by themselves, often they are the result of other diseases. Expectorants are to be administered to loosen the cough, also sedatives to quiet the nerves.

I.

Yellow sulfid of antimony...gr. 10
Ammonium chloridgr. 36
Extract of licorice.....fl.dr. 4
Syrup of althæafl.oz. 3½
Give 1 tablespoonful every 2 hours.

II.

Tincture of belladonna.....fl.dr. 4
Syrup of squill.....fl.dr. 4
Paregoricfl.oz. 1
Water, to make.....fl.oz. 6
Give 1 teaspoonful 3 times a day.

III. Sedative:

Morphine sulfategr. 2
Bitter almond water.....fl.oz. 1
Creosote waterfl.oz. 1
Mix and dissolve.

Give 20 drops in a little water 3 times daily.

Diarrhea Remedies.

Decomposed or very fatty food, overeating, drinking of too cold water, exposure to cold, etc., are liable to cause diarrhea.

Treatment consists in keeping the animal warm, rubbing the abdomen with alcoholic liniments, and giving opium, astringents and chalk; suppositories of cocoa butter with opium may also be of value. In feeding give meat, cooked rice stirred with yolk of egg, and meat broth.

I. For external use:

Spirit of camphor.....fl.oz. 2
Alcoholfl.oz. 2

Rub the abdomen with this mixture 3 times daily and then enclose the animal in a warm wrap.

II.

Opiumgr. 15
Althæagr. 15
Licorice rootgr. 45

Mix, make into a mass, and divide into 5 pills.

Give 1 pill mornings and evenings.

III. This mixture is intended for obstinate cases:

Lead carbonategr. 8
Bismuth subnitrategr. 30
Acaciagr. 40
Sugargr. 80

Mix and divide into 10 powders.
Give 1 powder every 3 hours.

IV. For suppositories:

Extract of rhatany.....gr. 18
Cocoa butterdr. 3
Make into 6 suppositories.

One suppository should be inserted far up into the rectum after each copious evacuation.

Some other astringent extract may replace the extract of rhatany.

Distemper Remedies.

Distemper is an infectious disease of dogs, usually of young animals, and only too frequently proves fatal. Dogs that are usually about in the open air are not subject to so severe attacks of the disease as are house dogs. The disease attacks the eyes, reddening them, causes inflammation of the nose, depresses the appetite, often there are cramps, and nervous disturbances. It is best to give cathartics, such as act slowly, like calomel. If the appetite is diminished, allow the animal to vomit. If the animal's head feels feverish, apply cold compresses (ice water). In the absence of ice, use diluted alcohol with some camphor. To the back apply mildly stimulating liniments. For the nervous disturbances, use valerian and ether.

I. Laxative powders:

Calomelgr. 5
Sugargr. 40
Mix and divide into 6 powders.

Give 1 powder every 5 hours.

II. Laxative pills:

Aloesgr. 60
Acaciagr. 60
Sodium nitrategr. 15
Make into 8 pills.

Give 1 pill 3 times a day.

III. To produce vomiting:

Give 5 grains of powdered veratrum viride, by applying it dry on the tongue. Administer it as soon as the disease makes its appearance.

IV. Liniment:

Ammonia linimentfl.oz. 3
Oil of turpentine.....fl.dr. 3

Apply to the whole length of the back twice daily.

V. Cooling lotion for the head:

Spirit of camphor.....fl.oz. 1½
Alcoholfl.oz. 1½
Water, to make.....fl.oz. 8

VI. For the nervous tremors:

Spirit of ether.....fl.dr. 3
Rochelle saltdr. 3
Simple syrupfl.dr. 4
Infusion of valerian (1:10) fl.oz. 3
Give a tablespoonful 3 times a day.

Eczema Remedies.

Eczema is the most common skin disease of dogs. It is usually mistaken for mange, but is an entirely different disease. Eczema in dogs is usually due to lack of exercise in the open air, accompanied by too generous feeding. It is a most troublesome disease to treat.

Treatment consists in regulating the diet, allowing outdoor exercise, giving mild cathartics, and applying the remedies mentioned below. The disease does not readily yield to treatment, requiring a long time to effect a cure.

I. For bathing:

Sulfurated potassa, powderedav.oz. 1
Pine tarav.oz. 1
Green soapav.oz. 8
Mix by the aid of a gentle heat.

This is sufficient for three baths. Wash the animal with this mixture every other day, then apply this salve:

II.

Creosote, beechwoodm. 80
Waterfl.dr. 2½
Zinc ointmentav.oz. 3

III. Another authority on veterinary medicine states that epsom salt in sufficiently large doses to produce a laxative effect, giving a dose every other day for 2 or 3 weeks, will cure many cases, especially those that are of but a few weeks or months' standing. When the affection is of long standing and more or

Eczema (Cont'd).

less extensive, the following external application should also be used:

Sulfur iodid	gr. 60
Sulfur, sublimed	av.oz. 1
Cod liver oil	fl.oz. 1

Or in place of the oil, $\frac{1}{2}$ ounce each of petrolatum and hydrous wool-fat may be used. Every portion of the body should be anointed whether diseased or not. One application usually cures, but if not another may be made in ten days. No special precautions need be taken to prevent the animals from licking themselves even though the ointment may make them somewhat sick, as the iodine present is apt to hasten the cure.

IV. Very bad and chronic cases are said to have been cured by the persistent use of the following ointment:

Carbolic acid	m. 40
Zinc ointment	av.oz. 4

Epilepsy Remedies.

I.

Zinc oxid	gr. 20
Sulfur	gr. 75
Jalap	gr. 75
Extract of green hellebore...	gr. 20
Extract of gentian or dan-	
delion, enough to form a mass.	

Divide into 60 pills.

Give 1 pill 3 times daily.

II.

Fluid extract of valerian....	fl.dr. 1
Syrup of buckthorn.....	fl.dr. 3

For cats, 15 to 20 drops every hour or two, with little milk or other food, or on some herbage like catnip.

Eye Inflammation, For

In simple inflammation of the eye, give mild cathartics and use one of the eye waters mentioned below.

I.

Lead acetate	gr. 10
Rose water	fl.oz. 2
Drop into the eye every hour.	

II.

Zinc sulfate	gr. 5
Rose water	fl.oz. 2
Use like the preceding.	

III. For internal use:

Magnesium sulfate	av.oz. 1
Sodium chlorid	dr. $2\frac{1}{2}$
Fennel water	fl.oz. 8

Mix and dissolve.

Give 1 tablespoonful twice daily.

Fits, Remedies for.

See Epilepsy Remedies.

Flea and Tick Powder.

Naphthalin	av.oz. 4
Starch	av.oz. 12

Reduce to fine powder and mix well.

A few grains of lampblack added will impart a light gray color—and if desired a few drops of oil of pennyroyal may be added to disguise the naphthalin odor. This is an excellent powder for the removal of fleas from cats or dogs, by rubbing it into the skin of the animal and letting it remain for a day or two, when it can be removed by combing or giving a bath to which some infusion of quassia has been added. This treatment is equally efficient for lice and ticks, with which dogs as well as cats are afflicted.

Goitre Remedy.

As in other animals, goitre is an inflammation of the thyroid glands and is treated with iodids, as in the following:

Potassium iodid	gr. 30
Water	m. 30
Green soap	dr. 3
Lard	dr. 3

This is to be rubbed in well twice daily.

Laryngitis, Remedies for.

The following is well recommended:

Cocaine hydrochlorid	gr. 10
Codeine sulfate	gr. 25
Bitter almond water.....	fl.oz. 4

Give 10 to 20 drops every 4 to 6 hours.

Lice Exterminators.

Lice occur on very young and on old dogs, especially if they are not properly fed or are not kept clean. The following remedies are among the best; insect powder may also be used.

I.

Parsley seed, ground.....	av.oz. 4
Tobacco leaves, fresh, cut	
fine	av.oz. 8

Alcoholfl.oz. 4
 Water, boilingfl.oz. 32

Macerate the solids with the water for one-half hour, add the alcohol, macerate for another half hour, then strain with expression.

In using, apply this liquid to the entire body of the animal, allowing it to dry into the skin. Reapply the liquid in 2 days, wait another 2 days, and wash the animal with warm water and finally rub on some green soap.

II. Benzine emulsion:

Cocoonut oilgr. 80
 Green soapgr. 200
 Benzinefl.dr. 7
 Waterfl.oz. 7

Warm the oil, soap and water together in a bottle until melted together, then add the benzine and shake thoroughly.

Apply this mixture twice daily to the infected spots. Every fourth day the animal is to be washed with soap and water.

III. Other remedies recommended are a 3% solution of cresol in water (dilute the U. S. P. solution of cresol), 5% solution of carbolic acid, 1 part of oil of anise mixed with 9 parts of sweet oil, and powdered white hellebore, 1 part, mixed with 2 parts of powdered anise seed.

Mange Remedies.

Mange in dogs is of two varieties, sarcoptic and follicular. The sarcoptic is very infectious; it is caused by an acarus which burrows in the skin and multiplies there. The follicular variety is caused by a parasite and is less infectious than the sarcoptic variety, but is less amenable to treatment, lasting a number of months. The animal affected with this kind of mange becomes covered with scabs which emit an offensive odor. Both kinds of mange are due mainly to lack of cleanliness.

Follicular mange usually begins in the vicinity of the eyes and ears and from there extends backward to the remaining

portions of the body. The hair of the affected parts falls out and there is intense itching, so much so that the animal tries to rub himself continually against furniture, walls, etc. Both forms of mange are frequently confounded with eczema.

Treatment should be commenced as early as possible, before the disease has gained much headway. The affected spots should be washed with a soap containing sulfur and tar. Near the eyes it may be advisable to apply a salicylic acid salve to avoid the risk of getting the soapy liquid into them.

I.

Sulfurated potassa, powdereddr. 1
 Creosotefl.dr. 1
 Pine tardr. 2
 Cocoonut oilav.oz. 2
 Mix thoroughly.

Wash the affected part with green soap and warm water, dry it, and apply this salve. Repeat this treatment every 2 days until a cure is effected.

II.

Salicylic acidgr. 24
 Lardav.oz. 1

This ointment is recommended for application to the head because soap cannot very well be used in the vicinity of the eyes. It is to be applied once daily.

III. The following is highly recommended for sarcoptic mange:

Sulfurdr. 1
 Peru balsamdr. 1
 White precipitate ointment....dr. 1
 Lard or petrolatum.....av.oz. 2

Use this after washing the dog thoroughly with an antiseptic soap and drying him.

If something cheaper is desired, use the ordinary sulfur ointment. This treatment, if well managed, is stated to effect a cure in a week or two. If there is eczema as an accompaniment, use also tar ointment.

IV. The follicular variety of mange is treated by using the following ointment:

Mange (Cont'd).

Creosote, beechwooddr. 1
 Ammoniated mercury ointmentdr. 2
 Sulfur ointmentav.oz. 5½

Apply twice daily to the diseased parts. Frequently wash the dog with a good antiseptic soap.

V. Cresol has been highly recommended for mange, as in the following:

Cresolfl.oz. 1½
 Green soapav.oz. 1½
 Alcoholfl.oz. 14

This preparation may be made stronger, depending on the intensity of the disease and its extension. A daily application is to be made with this mixture until a cure is effected.

VI. The following was very highly recommended by Prof. Simonds:

Oil of tar,
 Oil of turpentine,
 Sweet oil, each, equal parts.

Two thorough inunctions, 3 days apart, are said to destroy sarcoptic mange. The animal should afterwards be washed with a neutral soap and rinsed with a quart or two of warm water containing 5% of glycerin.

Pneumonia in Cats.

Good treatment is to apply turpentine or mustard to the chest and to administer one of these mixtures:

I.

Chlorodynedrops 8
 Solution of ammonium acetatem. 40
 Camphor water, to make...fl.oz. 1
 Give a teaspoonful every 3 hours.

II.

Ammonium carbonategr. 8
 Fluid extract of belladonna...m. 10
 Sweet spirit of nitre.....m. 30
 Chloroform water, to make.fl.oz. 1
 Give half a teaspoonful every 3 hours.

Rheumatism Remedies.

Rheumatism in dogs is usually caused by exposure to cold. The animal becomes stiff in its legs, is unable to go up stairways, and whines with pain.

Treatment consists in giving sodium

salicylate and mild cathartics and applying stimulant liniments.

I.

Sodium salicylategr. 192
 Waterfl.oz. 6
 Give 1 tablespoonful 3 times daily.

II.

Acetanilidgr. 75
 Rye flourgr. 75
 Mix and make into 5 pills.

Give 1 pill in the morning and 1 in the evening.

III. Application:

Spirit of camphor.....fl.oz. 2
 Alcoholfl.oz. 2

Apply to the painful limbs 3 times daily and then wrap with a woolen cloth.

Rickets, Remedies for.

Rickets occurs sometimes in very young dogs, and as in other animals is due to deficiency of calcareous matter in the food. Treatment consists in giving calcium salts, *e. g.*, calcium phosphate to the puppies and to the mother bitch.

I. For the puppies:

Calcium phosphateav.oz. 1
 Magnesium carbonategr. 90
 Sugar of milk.....av.oz. 3

Give as much as will lie on the point of a small knife 3 times a day.

II. For the mother bitch:

Calcium phosphateav.oz. 5
 Sugar of milk.....av.oz. 4
 Calcined magnesiaav.oz. 1

Give as much as will lie on the point of a broad knife 3 times a day.

Soreness of the Feet.

Some dogs are affected with a soreness and tenderness of the feet, resulting in the skin breaking open. One of the following lotions will be found useful:

I.

Solution of aluminum acetatefl.oz. 2
 Waterfl.oz. 1½
 Glycerinfl.oz. ½

Sponge off the animal's feet, especially between the toes, every morning and evening with this liquid.

Stomach Catarrh, Treatment.

Dogs are very liable to overeating or to eat indigestible or decomposed food, and this may result in gastric catarrh.

Treatment consists in first giving an emetic; then a purgative may be administered unless there is diarrhea, when medicine must be given to counteract the latter condition.

I. Emetic to use when there is constipation:

Tartar emeticgr. $\frac{1}{2}$
Ipecacgr. 15

Give at one dose in a spoonful of water.

II. Emetic to use when there is diarrhea:

Veratrum viridegr. $2\frac{1}{2}$
Sugargr. 30

Give at one dose in a spoonful of water.

III. Purgative:

Aloesgr. 70
Soap water, each, enough to make mass.

Make into three pills.

Give one pill every 5 hours.

IV. If there is diarrhea, give this mixture:

Tannic acidgr. 15
Bismuth subnitrategr. 10
Calamusgr. 150

Reduce all to powder, mix well, and divide into 5 parts.

Two hours after the emetic ceases to act give one powder in a little water, and repeat the dose every 12 hours.

Tape Worm Remedies.

See Worm Medicines.

Thrush, Remedies for.

Young dogs, like other young animals, are subject to canker spots in the mouth. To the mother bitch should be administered a saline cathartic like the following:

Sodium sulfateav.oz. 2
Sodium bicarbonatedr. 3
Waterfl.oz. 8

Give a tablespoonful every 2 hours.

The mouth of the puppy should be washed every 2 hours with a solution of 90 grains of borax, or 50 grains of alum, in 4 fluidounces of water.

Tonic Medicine.

Gentiangr. 15
Gingergr. 5
Cascarillagr. 15

Mix and make into a pill.

Give one such pill every day.

Urine, Bloody, Remedies for.

The usual treatment consists in giving mild cathartics and enemas, and applying dry warm cloths to the region of the bladder.

I.

Magnesium sulfate.....av.oz. $\frac{1}{2}$
Tamarind pulpav.oz. $\frac{1}{2}$
Fennel waterfl.oz. 5

Mix, dissolve and filter.

Give one tablespoonful every 2 hours.

Vomiting, Remedies for.

Although dogs vomit readily and often, continued vomiting may prove serious and cause straining of the nerves of the stomach. It is advisable to frequently give the animal ground oats boiled with water and to which a small amount of sodium bicarbonate has been added; also use some one of the following:

I.

Bismuth subnitrategr. 30
Bitter almondsgr. 30
Althæagr. 60

Mix all in powder, form a mass, and divide into 4 pills.

Give one pill every 2 hours.

II.

Bitter almondgr. 15
Creosote waterfl.dr. 10
Mucilage of acacia.....fl.dr. 4

Give one-half and repeat the dose in 2 hours.

Worm Medicines.

The best remedy for worms in dogs is oleoresin of male fern. It expels all kinds of worms as well as tape worms. It should always be given in conjunction with a vigorous cathartic, so that there is an evacuation within one or

Worm Medicines (Cont'd).

two hours. The dose of the oleoresin is 15 to 40 grains, according to the size of the dog. The dose of 30 grains given in the recipes below is a medium one and may be increased or diminished as required.

I.

Aloesgr. 45
 Soapgr. 45
 Oleoresin of male fern.....gr. 30
 Mix and make into 2 pills.

Administer both pills in the morning, the animal to remain fasting for some time.

II.

Areca nut, freshly ground, is considered an excellent remedy for worms in dogs. About one dram made into a

pill is the dose for an ordinary sized dog. This should be given at night followed by a dose of castor oil in the morning.

III.

Santoningr. 2
 Glass, fine powdergr. 5
 Areca nut, powder.....gr. 10
 Oleoresin of male fern,
 enough to make one pill
 or capsule.

Give like the preceding.

IV.

German wormseed, powder....dr. 1
 Fluid extract of senna.....fl.dr. 1
 Fluid extract of valerian....fl.dr. 1
 Fluid extract of pink root...fl.dr. 3
 Syrup of buckthornfl.oz. 2

Dose: $\frac{1}{2}$ to one teaspoonful night and morning.

This is also suitable for cats.

DIVISION VI.—POULTRY MEDICINES.**Poultry Powders.**

Various mixtures of powdery substances are dispensed under the names Poultry Powder, Poultry Food, Egg Food, and Egg-Making Food. The latter two names are used because of the alleged property of these mixtures, of increasing the egg-laying power of hens and other fowl.

Such mixtures as contain strong spices like capsicum are supposed to stimulate the egg-laying power of fowl.

I.

Ground bone or slaked
 limeav.oz. 12
 Gingerav.oz. 2
 Gentianav.oz. 1
 Capsicumav.oz. 1
 Sulfurav.oz. 1

Reduce all to powder and mix well.

Mix a teaspoonful with a quart of feed.

II.

Oyster shells, coarse powderav.oz. 24
 Calcium carbonateav.oz. 4
 Calcium phosphate.....av.oz. 4

Black pepperav.oz. 4
 Capsicumav.oz. $\frac{1}{2}$
 Venetian red.....av.oz. $\frac{1}{2}$

Reduce all to powder and mix well.

Use like the preceding.

III.

Capsicumav.oz. 2
 Allspiceav.oz. 4
 Gingerav.oz. 6

Reduce all to powder and mix well.

One tablespoonful to be mixed with every pound of food and fed two or three times a week. The addition of a little dried ants' eggs, if not too expensive, would prove beneficial.

IV.

Sodium sulfate.....av.oz. 2
 Capsicumav.oz. 1
 Sodium chloridav.oz. 1
 Iron carbonateav.oz. 1
 Gingerav.oz. 1
 Black antimonyav.oz. 1
 Bone meal.....av.oz. 1
 Fenugreekav.oz. 8
 Corn mealav.oz. 10

Mustard seedav.oz. 10
 Reduce all to powder and mix well.

Use like the preceding.

Chicken Cholera, Remedy for.

I.
Sulfuric acidfl.oz. 1
Iron sulfateav.oz. 16
Water, to makegal. 1
Add 1 fluidounce of this mixture to a pint of water, and supply in place of water, or mix with meal or other food.

II.
Iron sulfateav.oz. 1
Capsicumav.oz. 1
Black pepperav.oz. 2
Fenugreekav.oz. 4
Sandav.oz. 4
Calcium phosphateav.oz. 8
Reduce all to powder and mix well.
An even teaspoonful is to be given with the feed for a dozen fowl.

III. Give three or four teaspoonfuls of strong alum water once a day. This is the one remedy strongly recommended by the U. S. Department of Agriculture.

IV. See also No. V under Hog Cholera Medicines.

Lice on Poultry, To Destroy.

I.
Carbolic acid, crude.....fl.oz. 8
Waterpints 7½
Wash the woodwork with this mixture and sprinkle in the nests and on the floor.

This will kill the spider louse and all the body lice that infest poultry.

II.
Carbolic acid, crude.....fl.oz. 6
Carbon disulfidfl.oz. 5
Oil of tarfl.oz. 2
Kerosenegal. 1
Apply to the roosts, walls, etc., with a brush or whisk broom.

Roup Remedy.

Potassium chlorate.....av.oz. 2
Cubebsav.oz. 2
Aniseav.oz. 1
Licorice root.....av.oz. 3
Reduce all to powder and mix well.
A teaspoonful of this is to be mixed with food for 60 hens.

DIVISION VII.—BIRD MEDICINES**General Directions for Care of Birds.**

When ailing, the first thing is to keep the bird as quiet as possible; this is best accomplished by covering the cage closely. Most ailments of birds are due to a cold, the cause of which is generally owing to exposure to a draft of air or keeping the bird in an overheated room.

To cure a cold, add to the regular food equal parts of a paste consisting of hard-boiled eggs, corn meal and grated apple, the whole well spiced with capsicum.

Sometimes the bird seems hoarse and has apparently lost his voice; this is frequently occasioned by over-singing, and is remedied by dissolving a small amount of rock candy in the drinking water.

Birds troubled with diarrhea can usually be relieved by placing a rusty nail in their drinking water; if this is not effective, recommend Diarrhea Remedy.

Should the bird be troubled with costiveness, mix an additional quantity of green fruit to the regular food; if this does not relieve, recommend Constipation Remedy.

When moulting, special attention should be paid to the birds, as any disease to which they are predisposed will show itself then. Give warming, nourishing food, keep the bird and cage clean, place in the warm sunlight and keep it out of drafts. Should this not be effective to recuperate them, recommend Tonic Elixir.

The feet are often the seat of disease. To remove accumulations of dirt from the feet, hold them in lukewarm water for three or four minutes each day till the dirt drops off. If the feet are warty and seem to be sore, bathe them as above and grease them with fresh cream, or, still better, with a "cold cream."

Obstruction of the rump gland is

caused by the bird not using the gland. Open the gland with a fine needle and apply "cold cream."

For lice, supply the cage daily with clean, fresh sand mixed with some insect powder.

Mixed Bird Seed.

Hemp seed.....	av.oz. 5
Canary seed.....	av.oz. 4
Millet seed.....	av.oz. 1
Maw seed.....	av.oz. 1

Various other mixtures are also used as mixed bird seeds; some of these contain rape seed.

Canary Bird Food.

Poppy heads, coarse powder	av.oz. 1
Cuttlefish, coarse powder	av.oz. 1
Dried yolk of egg.....	av.oz. 2
Sugar, granulated.....	av.oz. 2
Biscuit from wheat flour, dried and powdered.....	av.oz. 8

German Bird Paste or Canary Food.

I.	Corn meal.....	av.oz. 8
	Sweet almonds, blanched.....	av.oz. 4
	Butter, fresh.....	av.oz. 1
	Sugar, powder.....	av.oz. 1
	Saffron	gr. 5
	Egg	I or 2

Pass the egg through a fine grater and add to the other ingredients. Beat to a smooth paste with cold water, and granulate the mass by passing through a coarse grater, then expose the product to the air in a warm place until quite hard and dry.

II.

Butter or lard, fresh.....	av.oz. 3
Sweet almonds, blanched.....	av.oz. 8
Pea meal.....	av.oz. 16
Saffron	gr. 10
Honey	sufficient

Beat together the ingredients until a smooth paste is formed, then granulate by pressing through a colander and allow to dry. Some prefer to add to the above the yolks of 2 eggs, or 2 or 3 hard-boiled eggs. Instead of the honey, 2 av. ounces of sugar may be used; then cold water must be added to the mixture to form a paste.

Food for Larks, Nightingales and Other Insectivorous Birds.

Use either of the three formulas just immediately preceding.

Mocking Bird Food.

I.

Hemp seed.....	av.oz. 1
Rice	av.oz. 2
Broken crackers.....	av.oz. 8
Corn	av.oz. 9
Capsicum	gr. 10
Mix and reduce to coarse powder.	

II.

Hemp seed.....	av.oz. 16
Rape seed.....	av.oz. 8
Crackers	av.oz. 8
Rice, unshelled.....	av.oz. 2
Corn meal.....	av.oz. 2
Capsicum	av.oz. 2
Lard oil.....	fl.oz. 2

Mix all but the oil, grind to coarse powder, and then incorporate the oil.

Food for Redbirds.

Rice, unshelled.....	av.oz. 6
Wheat, cracked.....	av.oz. 8
Sunflower seed.....	av.oz. 8
Canary seed.....	av.oz. 10
Hemp seed.....	av.oz. 16

Mix and grind to coarse powder.

Asthma in Canaries.

Spirit of chloroform.....	m. 90
Iron citrate, soluble.....	gr. 45
Tincture of capsicum.....	fl.dr. 5
Fennel water.....	fl.oz. 3½

Mix and dissolve.

Give a few drops on a lump of sugar in the cake once daily.

This mixture may be dispensed under the name Pectoral Tonic.

Constipation Remedy for Birds.

Fluid extract of senna.....	fl.dr. 2
Syrup of manna.....	fl.oz. 1
Fennel water, to make.....	fl.oz. 4

Give a few drops on a lump of sugar in the cage once daily.

Diarrhea Remedy for Birds.

Tincture of iron chlorid....	fl.dr. 2
Paregoric	fl.dr. 2
Caraway water.....	fl.oz. 3½

Use like the preceding.

Tonic Medicine.

I.

Tincture of iron chlorid....	drops 4
Tincture of cinchona.....	fl.dr. 1

Glycerinfl.dr. 2
 Caraway water, to make.....fl.oz. 2
 Put a few drops on a lump of sugar
 in the cage daily.

II.

Iron sulfate.....dr. 2
 Diluted sulfuric acid.....drops 15
 Waterfl.oz. 8

Dissolve the sulfate in the water and
 add the acid.

A teaspoonful of this mixture is to
 be added to each quart of the drink-
 ing water of the birds. This is specially
 recommended for moulting birds.

This preparation is known as Doug-
 lass' Mixture.

Gapes in Pheasants.

Ferrous sulfate.....gr. 60
 Capsicumav.oz. $\frac{1}{2}$
 Fenugreekav.oz. 1
 Red saunders.....av.oz. 1
 Licorice root.....av.oz. 2
 Molassessufficient

This is made into a paste, of which
 a piece the size of a hazelnut is dis-
 solved in a gallon of water and given
 the birds to drink.

Ointment, Healing and Soothing.

Peru balsam.....gr. 60
 Cold cream.....av.oz. 1

This is of general application when
 an ointment is needed for birds.

PART III.

PROPRIETARY AND SYNTHETIC REMEDIES.

Reference Abbreviations.

A. D.	American Druggist
A. J. P.	American Journal of Pharmacy
Apoth. Ztg.	Apotheker Zeitung
B. & C. Dr.	British & Colonial Druggist
Cooley.	Cooley's Cyclopedia
D.	Dietrich's Manual
D. C.	Druggist's Circular
Drog. Ztg.	Droguisten Zeitung
Era Form.	Era Formulary
Fenner's Form.	Fenner's Formulary
H.	Hager's Praxis or Manual
Ind. Ph.	Indiana Pharmacist
Kilner's Form.	Kilner's Formulary
Nat. Dr.	National Druggist
N. I.	New Idea
Parish.	Parrish's Pharmacy
Pharm.	Pharmacist
Ph. Central.	Pharmaceutische Centralhalle
Ph. Era.	Pharmaceutical Era
Ph. Post.	Pharmaceutische Post
Ph. Rundsch.	Pharmaceutische Rundschau
Ph. Ztg.	Pharmaceutische Zeitung
W. D.	Western Druggist

NOTE

The Preparations in this part having titles followed by a number are Proprietary or controlled by a single manufacturer, the number indicating the name and address of the manufacturer as given in the reference list at the end of the Part.

It is believed this information as to the makers of the various proprietaries will prove valuable to all desiring to request further information from the original sources.

In this department the attempt is made to include as many as possible of the synthetic and pseudo-synthetic remedies, most of the so-called pharmaceutical specialties, and some of the "patent" medicines. The reason for combining these dissimilar classes together is that many of the pharmaceutical specialties and some of the "patent" medicines bear names similar to the synthetic remedies. The pharmaceutical specialties and "patent" medicines are them-

selves frequently indistinguishable, due to similarity of titles.

In describing synthetic remedies, the plan generally followed is to mention the chemical names or synonymns, physical, chemical and medicinal properties, incompatibilities and doses. In describing pharmaceutical specialties, physical and medicinal properties and doses are mentioned as well as composition. Information regarding the composition is taken from manufacturers' catalogs or from the statement on the label (in compliance with the provisions of the federal food and drugs act) or from the booklets published under the auspices of the American Medical Association. Information regarding "patent" medicines is also taken whenever possible from the manufacturer's statement on the label and at other times from other sources of information which are supposed to be credible. The formulas given in the latter instances are quoted simply for what they are worth, considering the fact that chemistry has not advanced sufficiently to make possible an analysis of a complex organic mixture and also considering that manufacturers are at liberty to change their formulas at any time.

The source of information is given in most cases and is believed to be reliable, but, should any formula, by reason of any incorrect statement or inference, be regarded as unjust to the original preparation or as impairing its reputation, the correction will be cheerfully made upon receipt of the requisite information.

Table showing relation between various organic chemicals used in medicine.

NATURAL PRODUCTS			PURE SYNTHETIC PRODUCTS			
			PARAFFINS		BENZENES	
Metallic	Alkaloids		Esters		Amines	
	Morphine	Non-Alkaloids	Methyl chlorid	Ethers	Aldehydes	Mercaptans
Silver	Heroin Dionin Peronin	Chrysarobin Eurobin Lecithin Agaricin Nuclein Aristol Ichthioform Ichthalbin Thiol Ferrichthal Asparagin Apiol Arbutin Creosotal Bromipin Iodipin			Citarin Dextroform Glutol Lysoform Chloralose Dermiol Hypnal	Sulphonal Trional Tetronal
	Quinine Nicotine Pyrryl Cocaine Piperidine Theobromine Diuretin		Urethane Euphorin Hedonal Ural		Urea Veronal Piperazine Lycetol Sidal Urotropine Helmitol Chinotropin Tannopin	
Bismuth	Thioform Dermatol Aitrol Aitroform Aitrogen Bismutose					
Mercury	Hyrgol Mercuriol Hermophenyl					
Aluminum	Sozal					
Copper	Cuprol Ferratin Carni-					
Iron	ferrin					
Lithium	Urosin					
Peroxids	Hopogan Ektogan					
			ACIDS			
			Benzoic		Amines	
			Salicylic		Ketones	
			Anesthesin Mesotan Salol Salophen Salacetol Aspirin Agathin Salicylamide Salolnone		Pyrazolones	
			Orthoform		Antipyrin Bromipyrin Iodantipyrin Ferripyrin Pyramidon Salipyrin Iodipyrin Tolysal Tussol	
			Phenols		Lactophen Kryofin Lactophen Malakin	
			Monoxy			
			Phenol Phenol- phtalinein			
			Dioxy			
			Catechol			
			Guaiacol Benzocol Duatal Geosate Guaiaperol Thiocol Styracol			
			Pyrogallol			
			Eugallol Gallicol Gallicone Saligallol			
			Resorein			

A. B. C. Headache Powders.

Each powder is stated to contain:

Monobromated camphor.....	gr. $\frac{3}{8}$
Caffeine	gr. $\frac{3}{8}$
Sodium bicarbonate.....	gr. 2
Acetanilid	gr. $3\frac{1}{2}$
Sugar	gr. $1\frac{1}{2}$
Saccharin and peppermint...	a trace

Abbott's Saline Laxative.

This is stated to be chemically pure magnesium sulfate in effervescent form.

Abernethy's Pills.

Each pill contains:

Socotrine aloes.....	gr. 2
Extract of henbane.....	gr. 2
Blue mass.....	gr. 1
Ipecac	gr. $\frac{1}{2}$

—Fenner's and Beasley's Formularies.

Abican. (173)

This is described as a non-alcoholic, stainless preparation from *Abies canadensis* with "alumen potas," zinc sulfas, and thymol. It is recommended in the treatment of gonorrhea, gleet, leucorrhea, and all abnormal urethral and vaginal discharges.

Abrastol.

See Asaprol.

Abrin—(Jequiritin.)

This is an albuminous substance derived from jequirity seeds. It is a brownish-yellow powder, soluble in water. It is an exceedingly poisonous substance. It is very dangerous, especially to the nose, eyes, and wounds, and hence great care should be exercised in handling it.

Acacine. (73)

This is a white powder, used as an emulsifying agent.

Acamulsia.

This is an emulsifying agent, the formula for which is as follows:

Acacia	av.oz. 5
Tragacanth	av.oz. 5
Starch	av.oz. 5
Sugar	av.oz. 5
Boric acid.....	av.oz. 1

Reduce all to powder and mix well.

The mixed powder is to be used in the proportion of $\frac{1}{2}$ ounce to a pint of emulsion. 8 ounces of oil is to be put

into a quart bottle and shaken, then the acamulsia is to be added, the mixture then well agitated, 8 ounces of water to be added and the whole shaken vigorously for a few minutes.

Acetal—(Ethylidenediethylether.)

It is a colorless, volatile liquid, soluble in 18 parts of water and in all proportions of alcohol and ether.

It is used as a hypnotic and sedative, where chloral would be contraindicated. The dose is 2 or 3 fluidrams, usually given in the form of emulsion.

Acetanilid—(Phenylacetamide.)

This is in white, shining scales or white powder, odorless, and of a slightly burning taste.

It is used as an antipyretic, analgesic and antirheumatic, also now largely used externally as an antiseptic in place of iodoform. It is used in headache, neuralgia, and in injection mixtures for gonorrhea.

Dose: 3 to 10 grains, the maximum single dose being about 20 grains, preferably used in powders, tablets, capsules or cachets.

Acetanilid Comp.

The combination usually put up under this name is a mixture of 7 parts of acetanilid, 2 parts of caffeine and 1 of sodium bicarbonate. Other mixtures are used under the same name.

Acetanilid Comp. Dr. Bower's. (108)

These are tablets each said to contain

Acetanilid	gr. 3
Monobromated camphor.....	gr. 2
Caffeine citrate.....	gr. 1

Acetic Cantharidal Vesicant.

Cantharides, freshly powdered	av.oz. 8
Acetic ether.....	sufficient

Moisten the drug with the liquid, pack firmly in a percolator, add more menstruum, macerate for a few hours, and then percolate slowly until 16 fluidounces of liquid have been obtained.

Liquor Epispasticus or Blistering Liquid of the British Pharmacopeia is of

the same strength as the above and is made with the same menstruum.

Acetocaustin.

This is a 50% solution of trichloroacetic acid, which is used as a caustic for warts, corns, etc.

Acetopyrin.

This is a combination of antipyrin and aspirin. It is in the form of a colorless, crystalline powder, insoluble in cold water but readily soluble in warm water and alcohol. It has an odor of acetic acid which would indicate a rather unstable product. It is recommended not only as an efficient antipyretic but is said to have proved beneficial in acute rheumatism and neuralgia.

Acetozone (Benzozone). (159)

Chemically, this is benzoylacetyl peroxid, which belongs to a class of compounds known as organic peroxids in which an excess of oxygen is combined in such a way that it is slowly given off in a nascent condition. On contact with water it hydrolyzes, forming benzo-peracid and aceto-peracid which exert marked oxidizing and germicidal properties. These compounds decompose later with the formation of hydrogen peroxid and then of oxygen. It is a grayish white substance appearing in the form of a micaceous powder, which is marketed as a mixture consisting of equal parts of pure acetozone and an inert soluble powder. It is very readily decomposed and must not be kept in a hot location such as near a window where the rays of the sun can strike it, or near a steam pipe or radiator. If it be heated to the boiling point of water, an explosion may result. Contact with moisture should be avoided except when necessary in dispensing. In the pure state it dissolves in 1,000 to 10,000 parts of water, 20 of oil, is slightly soluble in alcohol, more so in ether and chloroform, but slowly decomposing in all these solutions except in petrolatum oil. It is decomposed by contact with alkali-

lies and organic matter of all kinds (e.g. glycerin).

It is a powerful antiseptic and is used chiefly internally in typhoid fever, and externally to some extent in surgery; it is also used as a vaginal or urethral injection in gonorrhea. In typhoid fever it is added to water in the proportion of 1 to 1,000 of warm water, shaken vigorously for 5 minutes, allowed to stand for 2 hours, and then solution is drank freely, say 2 quarts or more in 24 hours.

Acetozone Inhalant.

This contains 1% of acetozone, 1% of chloretone and 98½% of colorless liquid petrolatum.

Acet-Theocin-Sodium.

See Theocin-Sodium Acetate.

Acidol (Betaine Hydrochlorid.)

This is in white crystals of a sour taste, readily soluble in water. It contains 24% of hydrochloric acid and is used as a substitute for the latter usually in combination with pepsin in gastric affections. The dose is 2 to 10 grains.

Acodine.

This is a dental preparation said to consist of aconite, iodine, tannic acid and glycerin.

Acoin.

This is one of the newer local anesthetics. It is a white, odorless, very bitter powder, soluble in 17 parts of water, freely soluble in alcohol. It is very readily affected by alkalies and is also sensitive to light. It has been recommended for Schleich's infiltration anesthesia method in 1/10% solutions containing 8/10 % of sodium chlorid.

Actina.

Various formulas have been offered for similar preparations, as follows:

I.

Menthol	gr. 60
Oil of mustard.....	fl.dr. 2
Alcohol	m. 30
Ether	fl.dr. 1
Sponge, to make.....	oz. 1
—Prof. F. B. Tiffany, K. C.	

II.

Menthol	gr. 60
Oil of mustard.....	fl.dr. 2
Hydrobromic ether.....	fl.dr. 1
Sponge, to make.....	oz. 1

—Prof. Tiffany.

Actol. (Silver Lactate.)

This is a white, odorless, almost tasteless powder; soluble in 15 parts of water or albuminous fluids; an external and internal antiseptic in chronic and acute infectious diseases, sore throat, etc. It is used as a gargle and wash. Mix a teaspoonful of 2% solution with a glass of water, or use a solution of 1:500 to 1:200 for disinfecting wounds, abscess cavities, etc. The dose by injection $\frac{3}{4}$ to 3 grains, singly or divided. The solutions should be prepared fresh with boiled, distilled water and should be kept in the dark.

Addison's Granules of Arsenate of Gold.

These are stated to contain about 1/120 grain of gold arsenate. This salt is not introduced directly but is obtained in the finished pill by using gold and sodium chlorid and sodium arsenate in the proposition of 27 grains of the former and 8 of the latter to make 15 grains of gold arsenate.—H.

Adhesol.

Copal resin.....	parts 70
Benzoin	parts 6
Tolu balsam.....	parts 6
Oil of thyme.....	parts 4
Alphanaphthol	parts 6
Ether	parts 200

—Merck's Bulletin.

This is an antiseptic dressing or varnish, used in the treatment of superficial injuries.

Adipatum.

Anhydrous wool fat.....	parts 35
Petrolatum	parts 53
Ceresin, white.....	parts 7
Water	parts 5

This is used as an ointment vehicle.

Adipogen.

This is a preparation of the fresh liver of the codfish which is the subject of a U. S. patent. According to Chit-

tenden's analysis it contains 51.38% of codliver oil, 11.02% of proteid matter, 5.11% of mineral acids, and 0.57% of phosphoric acid. It is a paste of pleasant fishy odor. The dose is a teaspoonful 3 or 4 times a day. It may be eaten by spreading it on bread like butter.

Adnephryn Emollient. (187)

This is described as an ointment composed of the adrenal (suprarenal) active principle and a neutral base, representing in each 1,000 parts, 1 part of the active principle.

Adnephryn Oil Spray.

This is a 1 in 1,000 solution, aromatized, of the active principle of the suprarenal glands in a neutral oil. It is used as a nasal and throat spray, preferably after cleansing with Dobell's solution.

Adnephryn Solution.

This is described as a liquid, each 1,000 parts of which contains 1 part of adnephryn, the active principle of the suprarenal glands, dissolved in a sterile, physiologic salt solution containing $\frac{1}{2}$ % of methaform as a preservative. It is practically neutral in reaction, non-irritating, and stable in character. It is said not to turn pink. It is of value in minor surgical operations by checking the hemorrhage and affording a clear view of the field of operation.

Adonidin.

A glucoside obtained from Adonis vernalis. It is a hygroscopic, yellowish-white, odorless, bitter powder. It is easily soluble in water and alcohol; insoluble in ether and chloroform. It is a heart-tonic and diuretic, particularly in aortic and mitral insufficiencies.

Dose: 1/12 to $\frac{1}{4}$ grain several times daily, in pill, or in solution in chloroform water with ammonium carbonate. The maximum dose is $\frac{1}{2}$ grain.

Adorin. (178)

This is a powder used to prevent perspiration of the hands, feet, etc. It is stated to contain formaldehyde.

Adrenalin. (159)

This occurs as tiny, white crystals which are soluble in water slightly acidulated with hydrochloric acid and yields solutions that assume a pink color on standing. Solutions should therefore not be kept for any great length of time; preferably they should be made fresh as needed.

So powerful is this substance that a drop of a solution of 1 part in 10,000 when instilled into the eye will blanch the conjunctiva in from 30 seconds to 1 minute. Bloodless operations have been performed after the application of the weak solution. Internally adrenalin may be used as a cardiac stimulant.

Adrenalin is also marketed in the form of adrenalin inhalant, adrenalin ointment, adrenalin suppositories and adrenalin tablets.

Adrenalin Chlorid Solution.

This is a solution containing 1 part of adrenalin chlorid in 1,000 parts. Each fluidounce is stated to contain $\frac{1}{2}$ grain of adrenalin chlorid; $2\frac{1}{4}$ grains of chloretone (equal to $\frac{1}{2}\%$) and physiological salt solution, q. s. It is used generally in the form of a spray, the solution varying in strength from 1 to 1,000 to 1 to 15,000, or internally in doses of 5 to 30 minims. It causes contraction of the arterioles, rendering the parts it affects bloodless. Mucous membranes are blanched by its application; this is particularly noticeable when it is instilled into the eye.

Adrin (Epinephrin Hydrate). (141)

This is the active principle of the suprarenal glands which is said to be prepared according to the method of Prof. J. J. Abel, M. D.

Adrin solution is said to be more stable and retain its physiologic properties longer than any other preparation of the suprarenal glands because it is free from hydrochloric acid, the solvent generally used.

The following are prepared:

Adrin, in powder; it is almost white, stable, and non-hydroscopic.

Adrin Tablets, each containing 1/65 grain. For the extemporaneous preparation of the solution. 1 tablet dissolved in 15 minims of sterile water makes a 1 to 1,000 solution of adrin in normal saline solution.

Adrin Solution, 1 in 1,000.

Adrin Inhalant, containing 1/10% of adrin.

Adrin Ointment, containing 1/10% of adrin.

Also suppositories of various kinds and other kinds of tablets.

Aesculus Cones. (83)

Each suppository is stated to contain belladonna, gr. $\frac{1}{4}$; hamamelis, gr. $\frac{1}{2}$; calomel, gr. 1; "bismuth," gr. 2; ichthyol, gr. 2; combined with the active principle of Aesculus hippocastanum. Used for piles and kindred rectal diseases.

Agaricin. (Agaric, Agaricinic, Agaricic or Laricic Acid.)

A resinous acid derived from white agaric. It is a white, almost odorless, tasteless powder, melting at 140° C., slightly soluble in water, in 130 parts cold and 10 parts boiling alcohol; slightly soluble in ether, insoluble in chloroform.

It is used in treatment of night sweats in consumption. Dose: $\frac{1}{4}$ grain to 1 grain at night in pills.

Agathin. (Salicylaldehydemethylphenylhydrazine.)

It occurs in white or greenish, odorless, tasteless flakes, melting at 74° C., insoluble in water, but soluble in alcohol and ether. It is antineuralgic in rheumatic neuralgias, sciatica, etc.

Dose: 2 to 8 grains two or three times daily.

It should be kept in the dark.

Agurin. (Theobromine-Sodium-Acetate.)

This is a double salt of sodium acetate and theobromine-sodium, and is therefore similar to diuretin. It is a

white, finely crystalline powder, containing 60% of theobromine, is hygroscopic, and freely soluble in water, not readily in cold, but more freely in hot, alcohol. Aqueous solutions gradually split it up into its components. It is precipitated and decomposed by carbon dioxide and by acids; it is also incompatible with mucilaginous and saccharine liquids.

It is used as a diuretic in dropsy of cardiac origin; it is said to be without action on the heart.

The dose is 5 to 15 grains, preferably in wafers or capsules. If dispensed in solution, this should be freshly prepared, without sugar or mucilage.

Aiken's Tonic Pills.

Each is made to contain:

Quinine sulfate.....	gr. 1
Reduced iron.....	gr. $\frac{2}{5}$
Arsenous acid.....	gr. 1/50
Strychnine	gr. 1/50

Airol, Airform, Airogen. (Bismuth Oxyiodogallate), (Bismuth Iodo-subgallate.)

This is called an odorless substitute for iodoform.

It forms a grayish-green, voluminous, odorless, tasteless powder. It is soluble in alkalis and diluted mineral acids; insoluble in water, alcohol, ether and chloroform. Water or moist air (but not light) decomposes it. It is a surgical antiseptic, like iodoform, and anti-gonorrheal. It contains 20% of iodine.

In contact with wounds, iodine is slowly liberated while the bismuth subgallate exerts an astringent and siccative action.

Airol Paste.

This is as follows, according to Prof. Brun's formula:

Airol	part 1
Glycerin	parts 2
Mucilage of acacia, Kaolin.	
.....to make a soft paste	

This paste is to be prepared in a sterilized dish, but do not use a metal spotula. It is to be kept in well-covered

vessels protected from moisture and light.

Akaralgia. (G. E. Sodium Salicylate Comp.) (131)

This is a granular effervescent salt made according to the formula of Dr. B. K. Rachford of Cincinnati. Each 2 drams is stated to represent

Magnesium sulfate.....	gr. 50
Sodium sulfate, dried.....	gr. 30
Sodium salicylate, from oil	
wintergreen	gr. 10
Lithium benzoate.....	gr. 5
Tincture of nux vomica.....	m. 3

This is recommended as a remedy for migraine.

Alain's Pomade for the Hair.

Ferric oxid	1.5
Mercuric oxid.....	1.5
Cold cream.....	57.0

—Analysis by Wittstein.

Alapurin.

This is a name given to a pure grade of wool fat.

Albargin. (Gelatosse-Silver.)

This contains 15% of silver. It is a coarse, yellow powder freely soluble in cold water; the solutions remain permanent and neutral, and are not precipitated by solutions of albumin, sodium chlorid, or hydrochloric acid. It is an antiseptic and germicide. It is used as an application or injection in the treatment of gonorrhea, chancroids, gonorrheal ophthalmia, etc. As an irrigation or injection it is used in the form of an aqueous solution containing 1/10 to 2/10% of this compound.

Albert's Remedy.

Contains 29.5% of extractive in which opium alkaloids could be detected, 7.9% of potassium iodid, 14.6% of potassium acetate, and 10.3% of alcohol. It is used as an antirheumatic.—Apoth. Ztg.

—Analysis by Dr. H. Weller.

Albespeyre's Vesicatory.

According to Hager's Praxis, this is made from 1 part each of black pitch and lard, 4 parts each of burgundy pitch and yellow wax, and 6 parts of powdered cantharides. The mixture is

melted together and is then spread upon taffeta or paper.

Alboferin.

This is a combination of iron with albumin stated to contain on analysis, albumin, 90.14%; iron, 0.68%; phosphoric acid, 0.32%; and mineral matter, 8.86%. It is a light brown, nearly odorless powder, and having a slightly salty taste. It is readily soluble in cold water, producing a solution which is neutral in reaction and does not coagulate on heating. It is intended as a hematinic. It is marketed in the form of powder and tablets, the latter without and with chocolate.

Albolene. (121)

According to manufacturers' statements relative to albolene and liquid albolene, these are presumably purified petrolatum and purified liquid petrolatum respectively.

Alcarnose.

This is stated to be a predigested food. It is a tough, brown mass containing, according to the originator, digested albumin (from meal and vegetables), 23.8%; extractive matter and salts (from meat), 2.3%; digested carbohydrates (maltose and dextrin), 67.1%; and salts (sodium chlorid, alkaline phosphates, carbonates, sulfates and organic salts, alkaline earths, traces of iron), 6.8%.

Aldol.

Aldol or beta-oxybutyric aldehyde has been suggested for employment as a hypnotic. It is a thick odorless liquid, miscible with two parts of water, and soluble in alcohol. When kept for some time it gradually becomes crystalline, being converted into its polymer, paral-dol.

Aletris Comp. Elixir.

See Elixir Aletris Compound.

Aletris Cordial. (173)

This is stated to represent 10 grains of aletris, and 30 grains each of helonias and scrophularia.

Aleuronate.

This is a vegetable albumen prepared by a patented process. It is a yellowish-white tasteless powder. It has been employed for alimentary purposes and to make a diabetic bread, and is also used for surgical purposes.

Algidine. (131)

This is described as "an inorganic poultice composed of silica, magnesia, alumina and ferrous carbonate, together with the antiseptics eucalyptol, menthol and thymol with an excipient of solution of boroglyceride." It is used for the local, external treatment of all inflammatory conditions.

Alkacetamid. (188)

This is described as a compound, alkaline, coal tar derivative.

Alkaline Powder. (36)

This is stated to contain sodium bicarbonate 6 parts, and sodium phosphate, exciccated, 1.12 parts, which are said to be equivalent to 2 parts of sodium bicarbonate and 1 part of crystallized sodium phosphate. It is used as an acid and mild hepatic stimulant.

Alkaline Pancreatin Cordial. (192)

This is stated to contain pancreatin, diastase, rhubarb, golden seal, cinnamon, peppermint, and potassium bicarbonate.

Alkalithia. (105)

Each heaping teaspoonful is stated to contain 1 grain of caffeine, 10 grains each of sodium and potassium bicarbonate and 5 grains of lithium carbonate.

Alka-Phosphites. (63)

This is described as an alkaline syrup of hypophosphites comp., each fluid-ounce of which contains:

Potassium hypophosphite.....gr.	1½
Iron hypophosphite.....gr.	1½
Calcium hypophosphite.....gr.	1
Manganese hypophosphite....gr.	1
Quinine hypophosphite.....gr.	7/16
Strychnine hypophosphite...gr.	¼

It is a tonic and stimulant.

Alkarhein. (Alkaline Elixir of Rhubarb Comp. with Pancreatin.) (131)

Each fluidounce is stated to contain:
 Rhubarbgr. 20
 Potassium bicarbonate.....gr. 20
 Golden seal (freed from acid resin)gr. 10
 Ceylon cinnamon.....gr. 10
 Pancreatingr. 8

Also spirit of peppermint and simple elixir.

Alkathymol. (159)

Each fluidounce is stated to contain:
 Sodium borate.....gr. 4
 Sodium bicarbonate.....gr. 8
 Sodium chlorid.....gr. 8
 Sodium sulfate.....gr. 3
 Sodium proosphate.....gr. 1
 Mentholgr. $\frac{1}{2}$
 Thymolgr. $\frac{1}{4}$
 Eucalyptolm. $\frac{1}{8}$
 Oil pinus pumilio.....m. $\frac{1}{8}$
 Glycerinm. 60
 Chloretonegr. $\frac{1}{4}$

It also contains about 5% of alcohol.

Allingham's Ointment for Hemorrhoids.

Bismuth subnitrate.....gr. 60
 Calomelgr. 40
 Morphinegr. 3
 Glycerinfl.dr. 2
 Petrolatumav.oz. 1

—Columbus Medical Journal.

Allyl Tribromid. (Tribromhydrin.)

This occurs as a yellowish liquid which acts as a sedative and anodyne in hysteria, asthma, whooping cough, etc. The dose is 5 drops 2 or 3 times daily, administered in capsules.

Alodonna Pills. (198)

Each pill is stated to contain:
 Aloingr. $\frac{1}{4}$
 Extract of belladonna.....gr. $\frac{1}{8}$
 Ipecacgr. $\frac{1}{16}$
 Strychninegr. $\frac{1}{60}$

See Lapactic and Peristaltic Pills.

Alpha-Eucaine.

See Eucaine.

Alphanaphthol.

See Naphthol (Alpha).

Alphazol. (3)

This is described as a concentrated solution containing formaldehyde, boro-

glyceride, sodium salicylate, thymol, menthol and oil of pine.

Alphol. (Alphanaphthol Salicylate.)

It corresponds to Betol (which see), the latter being the betanaphthol compound, the former the alphanaphthol compound. It is a reddish-white powder, soluble in alcohol, ether and fatty oils. It darkens with age and exposure.

It is employed in the treatment of articular rheumatism and gonorrhea in doses of 8 to 15 grains.

Alphozone. (187)

Chemically this is succinic dioxid or peroxid. It occurs as a white, fluffy powder. It melts at 115° C. and does not decompose until about a temperature of 128° C. is reached. It is therefore not affected by any temperature below that of boiling water, but it should not be subjected to direct heat, such as exposure to the rays of the sun or heated steam radiators. When brought into a flame it explodes, but it does not explode on percussion or friction. It dissolves readily in 60 parts of water and on agitation for a short time will dissolve in 30 parts. When dissolved in water, it slowly undergoes change, succinic peracid being formed, which is also a powerful germicide.

It is a powerful, non-toxic germicide and antiseptic. It is useful internally in typhoid fever, 4 grains being dissolved in a tumblerful of water, the patient being advised to drink freely of this solution. It may also be used in tonsillitis, leucorrhea and gonorrhea, as a dusting powder in skin diseases of an infectious nature, or as a spray for the nose. The usual proportion in solution as a douche or spray is one part of alphozone to 1,000, 1,500 or 2,000 parts of water.

Alsol.

This is a name for dried aluminum aceticotartrate.

Althæol Cerate. (160)

This is stated to contain althea, ichthyol, belladonna, eucalyptol, and a special base.

Colocynth, fine powder.....gr. 120
 Gamboge, fine powdergr. 120
 Oil of anisefl.dr. 1
 Water, to make a mass.
 Divide into 3-grain pills.

Andrews' Tonic-Hematic Pills.

Each is made to contain
 Reduced irongr. 1½
 Quinine sulfategr. 1
 Ipecacgr. ⅛
 Arsenous acidgr. 1/40
 Strychnine sulfategr. 1/40

Anemic Pills. (129)

Each pill is stated to contain
 Ferrous carbgr. 2
 Oxyhemoglobingr. 3/4
 Aloingr. 1/8
 Zinc phosphidgr. 1/20
 Strychnine nitrategr. 1/40
 Arsenous acidgr. 1/50

Anemonin.

This is the active principle of *Anemone Pulsatilla*. It is in colorless aciculate crystals, easily soluble in hot alcohol and oils; very sparingly in water and ether. It is an antispasmodic and sedative in asthma, whooping cough, bronchitis, etc., and anodyne dysmenorrhea, epididymitis, etc.

Dose: ¼ to 1 grain twice daily, in wafers, pills or powders. The maximum single dose is 1½ grains; the maximum daily dose, 3 grains.

Anesthesin.

Chemically this is the ethyl ester of paramidobenzoic acid and is closely related to orthoform. It is a white, crystalline powder, odorless and tasteless, but producing a sensation of numbness when placed on the tongue. It is almost insoluble in cold, difficultly soluble in hot water, soluble in 6 parts of alcohol, and to the extent of 2 or 3% in fatty oils. In oil solutions it may be sterilized without decomposition, but by prolonged heating with water or by warming with alkalies it is decomposed.

It was introduced as a substitute for cocaine and is a local anesthetic similar to orthoform. The anesthetic action is purely local, does not penetrate the mu-

cous membrane, and on account of its insolubility it cannot be used hypodermically.

It is used in gastralgia, in ulcer and cancer of the stomach, and is recommended for anesthetizing wounds, burns, etc.

The dose for internal use is 5 to 10 grains 2 or 3 times daily. Externally it may be applied as a dusting powder, pure or diluted, or as an ointment, or in suppositories.

Anestheto Obtundent.

A dental anesthetic containing about 1 part of cocaine hydrochlorate in 30 of mixture, also carbolic acid, camphor, glycerin, oils of cinnamon and citronella, and probably alcohol.—Sadtler.

Anesthol.

This is a name given to a mixture of 17 parts of ethyl chlorid, 36 parts of chloroform and 47 parts of ether. It is a colorless liquid, having an agreeable odor and a boiling point of 104° F. It has been recommended as an agreeable and relatively safe anesthetic to use by inhalation, being usually without untoward after-effects.

Anesthyl. (Chloryl.)

Ethyl chloridparts 5
 Methyl chloridpart 1

Angineurosine.

This is a synonym for nitroglycerin.

Angier's Petroleum Emulsion.

This is advertised to contain in each fluidounce 33⅓% of purified petroleum and 12 grains each of the hypophosphites of lime and soda. It contains no alcohol.

Anhydrosine. (9)

This is described as an aseptic clay poultice composed of sterilized bolted clay, anhydrous glycerin, and antiseptics.

Anilipyrin.

This is a white powder, readily soluble in water, prepared by melting together 188 parts of antipyrin and 135 parts of acetanilid. It is used as an antiseptic

and analgesic in grip, neuralgia and articular rheumatism. The dose is 5 to 10 grains 3 or 4 times a day.

Anisothobromine.

This is theobromine sodium anisate and contains nearly 48% of theobromine. It is less soluble than diuretin and is less easily attacked by the air, and therefore has better keeping qualities.

Annidalin.

This is another name for aristol. Thymol iodid, U. S. P., is of the same composition.

Anozol.

This is said to be a mixture of thymol and iodoform.

Antalgic Saline. (212)

This is a granular effervescent salt, each dessertspoonful of which is stated to contain 4 grains each of antipyrin and sodium salicylate.

Antemesine.

This is a name given to anesthesin put up in gelatin capsules, each containing 1½ grains. It is prescribed in hyperesthesia of the stomach and in nervous dyspepsia.

Anthrarobin.

A yellowish-brown powder, soluble in 10 parts of glycerin and 10 of cold and 5 of hot alcohol. It is employed medicinally instead of chrysarobin, in 10 to 20% ointments for psoriasis, herpes, and other skin diseases.

Anthrasol. (Odorless Coal Tar.)

This is described as coal tar, freed from pitch, pyridine bases, and coloring matter, and mixed with juniper tar and oil of peppermint. It is a thin, mobile, light-yellow oil, which does not stain either skin or clothing. It is miscible with absolute alcohol, acetone, fatty oils, etc.

It is an antiseptic and parasiticide. Like ordinary tar it allays irritation of the skin. It is recommended for eczema, especially for the after treatment,

for all pruriginous affections, in diseases of the hair, as a restorative and for the removal of dandruff. Locally it is used in the form of a 5 to 10% ointment in eczema; 10% ointment with glycerite of starch and 10% of wool fat in pruritis; 20 to 30% ointment or paste in lichen; in combination with sulfur and soap in parasitic skin affections.

Antianæmia.

Each fluidram is stated to contain iron, ¾ grain, iodine, ½ grain and arsenic, 1/100 grain.

Antiarthritin.

This is a remedy for rheumatism and gout; it is said to consist chiefly of salicin. It is a brown powder soluble in alcohol. The dose is 5 to 10 grains.

Antibrule. (10)

This is stated to be chemically pure "picro-carbolic acid" united with "nascent formaldehyde" in a "definite and uniform combination." It has the appearance of a saturated aqueous solution of picric acid.

The remedy is advertised as a keratoplastic, to be used in the treatment of burns and scalds.

It may here be stated that a saturated solution of picric acid in water has been proven to be highly successful in the treatment of burns and scalds.

Anticongestus. (212)

This is stated to be a combination of dehydrated silicate of alumina and magnesia, boric and salicylic acids, iodine, potassium iodide, carbonate of iron, gaultheria, eucalyptus, thymol and peppermint, incorporated with glycerin.

Anticongestus Comp.

Described as a mixture of lead water, laudanum, belladonna, and aconite with "anticongestus."

Antidiabetin.

This is said to be a mixture of saccharin and mannite. It is marketed in three strengths—Nos. 70, 10 and 1—these numbers indicating the ratio in sweetening power to cane sugar.—Ph. Ztg.

Alterative Tonic Syrup. (181)

Each fluidounce is said to represent 40 grains of *Alexandria senna*, 10 grains each of red clover, burdock and stillingia, 4 grains each of *berberis aquifolium*, sarsaparilla and poke root, and 8 grains of potassium iodid.

Alum Powder Compound.

See Compound Alum Powder.

Aluminum Salicylate.

See Salumin.

Aluminum Tannate.

See Tannal.

Alumol. (Aluminum Naphtholsulfonate.)

This is a colorless or slightly reddish nonhygroscopic powder. It is readily soluble in water; also soluble in alcohol and glycerin; insoluble in ether. It is an antiseptic and astringent for purulent wounds, leucorrhea, gonorrhea, as a dusting powder in the nursery, for abscesses, etc. It is used in $\frac{1}{2}$ or 2% solution.

Alunol.

(Pharmaceutical Specialty Co., Mfrs.)

The ingredients are stated to be ichthyl, sulfur, oil of cade and oleates of zinc and aluminum.

Alvatunder.

This is a dental anesthetic which upon examination was found to consist of

Cocaine hydrochlorid	1.0
Carbolic acid, liquefied..drops	3
Tinct. of iodine, decolor..drops	3
Glycerin	10.0
Distilled water, to make.....	100.0

—Apoth. Ztg.

Alypin.

This is a complicated organic chemical. It occurs as a white crystalline, bitter powder, which is hygroscopic, is extremely soluble in water and is readily soluble in alcohol. It is not rendered turbid by the addition of moderate amounts of sodium bicarbonate and may be sterilized by boiling for 5 minutes or less without decomposition. It should be protected from the air in well-stoppered containers; 2 to 4% solutions are

quite stable, but weaker ones are likely to become mouldy.

It is a local anesthetic, claimed to be equal to cocaine, but not a mydriatic. It is said not to produce disturbance of accommodation and be less toxic than cocaine.

It is used externally in the form of a 10% solution; hypodermically in 1 to 4% solutions; for the eye in 1 to 2% solutions.

Alypin Nitrate.

This is white crystalline powder, readily soluble in water and alcohol. It is used in the same manner and for the same purposes as alypin. It is especially intended for use in combination with silver nitrate in solution.

Amenorets. (5)

The formula for the suppositories is given this wise: "The active principles of pyrolingenous acid, iodine, picric acid, boracic acid, quinine, tetraborate of soda, glycerine and oil of theobromo." The formula for the tablets is "pyrolingenous acid, iodine, boracic acid and tetraborate of soda."

Aminoform.

This is chemically hexamethylene-tetramine, or what is known in the U. S. P. as hexamethylenamine.

Aminol.

A liquid disinfectant, 1 liter of which is stated to contain 1.52 grams of calcium hydrate, 3.516 grams of sodium chlorid, and 0.29 gram of trimethylamine.—Coblentz.

Amolin Deodorant Powder.

According to the analysis of the Council of Pharmacy and Chemistry of the American Medical Association, this was found to contain 99% of boric acid.

Ammonol.

Each ounce is stated to contain 96 grains of paracetylphenetidin and 120 grains of phenylacetamid.

Amylene Chloral.

See Dormiol.

Amylene Hydrate.

This is a light, colorless, oily liquid, of an ethereal and camphoraceous taste and odor, soluble in about 8 parts of water, miscible in all proportions with alcohol, ether and chloroform. It is a hypnotic which is said to produce a quiet and refreshing sleep lasting from 6 to 9 hours when given in doses of 3 or 4 grams.

Amylocarbol.

Carbolic acid	parts 9
Green soap	parts 150
Amyl alcohol	parts 160
Water, to make.....	parts 1000
—Coblentz.	

Amyloform.

This is a condensation product of formaldehyde and starch. It is a white, odorless, insoluble powder. It is used as a surgical antiseptic, either alone or in various antiseptic mixtures.

Amyrol.

This is an alcohol obtained by Liotard from West Indian oil of santal. It is a colorless liquid, is an isomer of santalol and is intended as a substitute for oil of sandalwood.

Analan.

This is an ointment containing boric acid, bismuth oxid, zinc oxid, iodin, phenol and ichthyol. It is used in the treatment of hemorrhoids, eczema, etc. —Apoth. Ztg.

Analeptic Pills. (212)

Each pill contains:	
Resin of guaiac.....	gr. 1
Antimonial powder	gr. ¾
Purified aloes	gr. ¾
Myrrh	gr. ½

Analeptine Cordial.

See Cordial Analeptine.

Analgén.

See Quinalgen.

Analgesine. (181)

This is stated to be made according to the formula of Dr. C. L. Kerr, and is composed as follows:

Acetanilid	parts 6
Ammonium chlorid	parts 2

Caffeine citrated	part 1
Sodium bicarbonate	part 1

Analgesine is also used by the French as a synonym for antipyrin.

Anasalpin.

A name for purified wool fat.

Anasarcin.

This is stated by the manufacturers to contain in combination the active principles of Oxydendron arboreum, Urtica scilla and Sambucus canadensis, in tablet form.

Anaspaline.

Petrolatum	part 1
Wool fat	parts 3
—A. D.	

Anazyme. (123)

This is stated by the manufacturers to be a chemical product of boracic acid and phenol.

Anderson's Scot's Pills. (Grana Angelica.)

Dr. Paris declared some years ago that these consisted of Barbadoes aloes, jalap and oil of anise. The following is probably the formula used at present (Cooley):

Barbadoes aloes	av.oz. 14
Jalap, fine powder.....	av.oz. 4½
Treacle	av.oz. 1
Soap	av.oz. ¾
Oil of anise.....	fl.dr. 1

Melt together on a water bath the first four ingredients; when partly cold incorporate the oil and divide into 3½ grain pills.

The original formula from a copy of the original document in the Chapel of the Rolls:

Socotrine aloes	av.oz. 4
Myrrh, best	av.oz. 1
Saffron	av.oz. ½

Reduce each separately to fine powder; mix them well, in an earthen pipkin, with a spoonful each of water and sweet oil, by the heat of a slow fire, and form the mass into "common-sized pills."

Formula of the Philadelphia College of Pharmacy:

Barbadoes aloes	av.oz. 3
Castile soap	av.oz. 1

Antidiphtherikon.

Oil of birch.....	parts 5
Oil of beech.....	parts 3
Alcohol	parts 90
Potassium carbonate.....	part 1
Potassium sulfid.....	parts 5
—Coblentz.	

Antidiphtherin-Klebs.

This is diphtheria antitoxin, obtained from cultures of diphtheria bacilli.

It is a local specific against diphtheria. It is applied two or three times daily to the palate and throat as long as there are false membranes; after this, in diluted form for several days. When the larynx and trachea are attacked, 8 minims of antidiphtherin are injected into the parts 3 or 4 times daily.

Antidipsole. (162)

This is stated to be composed of lupulin, capsicum, cinchona, apium graveolens, serpentaria, and aromatics. It is recommended for the treatment of the liquor habit.

Antidol.

This is a mixture of caffeine, citric and salicylic acids, and antipyrin. It is used as an antineuralgic, antipyretic and antiseptic. The dose is 15 grains.—Ph. Centralh.

Antidolor, "cito." (142)

This is stated to be a mixture of 14 parts of acetanilid, 6 parts of citrated caffeine and 3 parts of sodium bicarbonate.

Anti-Dyspeptic Elixir.

See Elixir Anti-Dyspeptic.

Anti-Fat.

According to N. I., this is a fluid extract of bladder wrack (*Fucus vesiculosus*), prepared preferably from the fresh plant, 3 pounds being used to make 1 pint of the extract, with diluted alcohol as the menstruum.

Antifebrin.

This is the same as acetanilid.

Anti-Fermentine.

A preparation of this name is described as a white powder, used as a preservative for fruit juices, cider and

other dietetic articles. Presumably it is salicylic acid which is sold largely under various fanciful names for preservative purposes.

Anti-Fermentive No. 3. (108)

Tablets each said to contain 2 grains sodium salicylate combined with charcoal, ginger and aromatics.

Antifungin.

This is said to be prepared as follows:

Calcined magnesia.....	part 1
Boric acid.....	parts 15
Water	parts 75

Heat the magnesia with the water on a water bath, add the boric acid, heat until about dissolved, evaporate to dryness and powder. It is therefore simply a mixture of magnesium borate and boracic acid.

Antikamnia.

According to the manufacturers, this contains 350 grains of acetphenetidine per ounce. It is also stated not to contain acetanilid, antipyrin, alcohol, morphine, opium, codeine, heroin, cocaine, alpha- or beta-eucaine, arsenic, strychnine, chloroform, cannabis indica or chloral hydrate.

It is marketed in the form of powder and tablets, the tablets also appearing in combination, such as with codeine, heroin, quinine salol, etc.

Antikol. (Anti-Calor.)

The manufacturer stated that it is composed of acetanilid, caffeine citrate, quinine bisulfate and sodium bicarbonate, each 10 grains containing 1 grain of caffeine citrate.

Goldman gives the following from an analysis of a sample:

Acetanilid'	parts 30
Sodium bicarbonate.....	parts 7
Tartaric acid.....	parts 3

Antikol Comp. Tablets were stated to consist of "antikol," $3\frac{1}{2}$ grains; quinine sulfate, 1 grain; dover's powder, 1 grain; and extract of aconite root, 1/100 grain.

Antilupia Tablets. (148)

Each ounce is stated to contain acetanilid, 236 grains; caffeine, 65 grains; combined with sodium bicarbonate, rochelle salt, sodium bromid, and active principles of the strobiles of *Humulus Lupulus*.

Antinervin. (Salbromalid.)

- I. Ammonium bromid.....part 1
Salicylic acid.....part 1
Acetanilidparts 2
—Ritsert and Goldman Analysis.

- II. This formula has also been given:
Acetanilidpart 1
Sodium salicylate.....part 1

Antinonnin.

Chemically this is the potassium salt of orthodinitrocresol. It occurs as a yellow paste soluble in water. It is a deodorizer, disinfectant and parasiticide. It prevents the growth and propagation of fungi, mildew, dry rot, etc., in the form of a solution of 1 pound of antinonnin in 5 to 15 gallons of water or whitewash. It is used as a wash for the walls and cellars of breweries, distilleries, etc., to destroy the mold and fungi. It is stated to keep vaults and walls free from dampness, remove unwholesome odors from gutters, stables, closets, etc., and prevent woodwork from rotting or becoming moldy.

Antinosin. (Tetraiodophenolphthalein.)

This is the sodium salt of nosophen. It is a greenish-blue powder, having a faint odor of iodine; it is soluble in water.

It is an antiseptic and is used for surgical purposes; it is also used in 1/10 to 1/2% solutions in nose and throat troubles, cystitis, etc.

It should be kept well-stoppered as on exposure it becomes insoluble, being decomposed into nosophen and sodium carbonate.

Anti-Pathic Powders.

These were found to consist of magnesium carbonate and bismuth subnitrate, the former predominating.—N. I.

Antiphlogistine. (61)

This is described as "a mixture composed of the finest anhydrous and levigated argillaceous mineral, chemically pure glycerin, compounds of iodine representing a small percentage of elementary iodine, minute quantities of boric and salicylic acids and the oils of peppermint gaultheria and eucalyptus."

Anti-Phthisis Solution.

See Sol. Anti-Phthisis.

Anti-Phymin. (Cock's Anti-Bacilli Compound.)

This is stated to be "a chemical and mechanical compound of formaldehyde, ozone, carbon dioxide, and the products of combination of tar (creosote) and boric acid forced into distilled water under high atmospheric pressure."

Antiplug.

According to W. D. this appears to consist of contused gentian and licorice roots bound together into plugs with tobacco leaves by means of pressure.

Antipyonin.

This is tetraborate or polyborate of sodium, made by fusing together equal parts of boric acid and borax.

Antipyrine. (Phenyldimethylpyrazol — Phenazone — Analgesine — Parodyne—Phenylone — Sedatine — Methozin—Anodynin.)

This is in fine, white scales or powder, soluble in 1 part of water and 2 parts of alcohol.

It is used as an antipyretic, analgesic, antirheumatic, etc., being used in headaches, to reduce fever, chorea, whooping cough, influenza, etc. Doses, 5 to 15 grains, 4 or 5 times daily. It attained a great popularity at one time but is now much less used than formerly.

Antipyrine Salicylate.

See Salipyrin.

Antirheumatin.

This is a combination of sodium salicylate and methylene blue.—Merck's Bulletin.

Antisapron. (11)

This is stated to contain the antiseptic principle of *Eucalyptus globulus*, *Gaultheria procumbens*, *Mentha arvensis* and *Thymus vulgaris*.

Antisclerosin.

This is a remedy marketed in tablet form and corresponding to Trunczek's Inorganic Serum. It is used in the treatment of arteriosclerosis, rheumatism and some nervous disorders. The "serum" referred to is a mixture of all the alkaline salts normally found in the blood. The formula is as follows:

Sodium phosphate, g. 0.15 (gr. 2.42); sodium carbonate, g. 0.21 (gr. 3.5); sodium sulfate, g. 0.44 (gr. 6.8); sodium chlorid, g. 4.92 (gr. 76.0); potassium sulfate, g. 0.40 (gr. 6.2); distilled water, to make, g. 100.00 (oz. 3½.)

In treating with this fluid, begin by injecting 1 cc. and increase by definite increments up to 5 cc. every second, 4th or 7th day.

Antisepe.

See Antiseptic Spray.

Antiseptin. (Asepsin—Bromanilid.)

This is in white crystals that are soluble in alcohol and ether and but sparingly soluble in water. It is used externally as a surgical antiseptic in 10% ointments and internally as an antiseptic and anodyne in doses of ½ to 1½ grains.

Antiseptic-Crede. (Silver Citrate.)

This is the normal silver salt of citric acid. It is a white odorless, heavy powder, soluble in 3,800 parts of water. It is somewhat sensitive to light and should therefore be kept in the dark or in amber-colored bottles.

It is a non-irritating antiseptic, said to be useful in the treatment of wounds, ulcers, gonorrhea, and other affections of the mucous membranes. It may be applied in substance to wounds. In solutions it is used in strengths of from 1:10000 to 1:4000.

Antiseptic Gargle. (Dr. Curtis.) (76)

Each fluidram is stated to contain
Tanningr. 1
Absolute phenol.....gr. ¼
Glycerinm. 15
Oil of peppermint (Fraser).....m. 1/15

Antiseptic Liquid.

This very elastic term is applied to a number of preparations. For example, it is frequently applied to a preparation resembling Antiseptic Solution, U. S. P.; it has been applied to a crude carbolic acid preparation resembling creolin and its congeners, and has also been applied to an antiseptic like Platt's uchlorides.

Antiseptic Pills. (212)

Each pill contains
Sodium sulfite.....gr. 1
Salicylic acid.....gr. 1
Extract of nux vomica.....gr. ¼

These are used for some cases of dyspepsia, also for rheumatism.

Antiseptic Comp. Pills. (212)

These contain in each pill
Sodium sulfite.....gr. 1
Concent. pepsin.....gr. 1
Salicylic acid.....gr. 1
Extract of nux vomica.....gr. ¼
Capsicumgr. 1/10

They are recommended for cases of dyspepsia, indigestion and malassimilation of food.

Antiseptic Comp. Powder. (107)

This is described as containing "the antiseptic properties of thyme, gaultheria, mentha, and eucalyptus, in combination with alumen, sodium borate, acid carbolic, and acid boracic" with the addition of golden seal.

Antiseptic Sphenoids. (120)

These are wedge-shaped suppositories for vaginal or rectal use and said to be composed of boric acid, acetanilid, hydrastis, opium, betanaphthol and zinc sulfate.

Antiseptic Spray. (Antisepe.) (132)

This is described as a neutral solution of methyl salicylate, eucalyptol, benzoic acid, thymol, menthol and boric acid.

Antiseptin.

Several preparations are put up under this name. One is a wood preserver consisting of sodium silicate and mercuric chlorid.

Antiseptin, Radlauer, analyzed by Goldman gave the following:

Zinc sulfate.....	parts 34
Boric acid.....	parts 4
Zinc iodid.....	part 1
Thymol	part 1

Also according to Coblenz, a mixture of 80 parts of zinc sulfate, 2 of thymol and 1 of boric acid.

Antiseptol. (89)

This is described as being "composed of the essentials of powerful antiseptics in combination with benzo-boracic acid."

Another article by this name, known chemically as cinchonine iodosulfate is made by interaction of cinchonine sulfate, iodine and potassium iodid. It is a red-brown powder, insoluble in water, but very soluble in alcohol and chloroform. It contains 50% of iodine, and is used as a substitute for iodoform.

Antispasmin. (Narceine-Sodium and Sodium Salicylate.)

A white, slightly hygroscopic powder, containing about 50% pure narceine. It is readily soluble in water; it should be kept from air and light as it becomes dark-colored and insoluble.

Its medical properties are antispasmodic, sedative and hypnotic for whooping-cough, laryngitis stridulus, irritating coughs, etc.

The dose for children in whooping-cough is $\frac{1}{4}$ to $\frac{3}{4}$ grain 3 or 4 times a day.

Antistreptococcin.

This is a serum preparation, used as a remedy against erysipelas.

Antisudorin.

A remedy for excessive perspiration which is applied locally. It consists of boric acid, oil of wintergreen, salol and traces of chromic anhydrid dissolved in water and alcohol.—Ph. Ztg.

Antitetanic Dusting Powder. (159)

This consists of equal parts of chloretone and dried antitetanic serum. It is intended for the treatment of wounds infected, or suspected of being infected, with tetanus germs or toxins, and must be applied within six hours after the wound is received. The powder, unlike a liquid, retains its activity indefinitely.

Antithermoline.

This is a plastic surgical dressing which is stated to be "prepared from the finest quality of imported kaolin, washed and purified, combined with suitable proportions of boracic acid, eucalyptus, menthol, thymol and glycerin, as per published formula."

Antithyroidin.

The Antithyroidin Mœbius is the blood-serum of sheep from which the thyroid gland has been removed at least 6 weeks before the blood is drawn, preserved by the addition of $\frac{1}{2}\%$ of phenol. It is an amber-colored fluid, without odor or taste except a faint one of carbolic acid. It is marketed in amber-colored vials containing 10 cc. With proper precautions it is said to keep indefinitely. It is administered by the mouth in doses beginning with 8 to 15 minims, 3 times a day, gradually increasing the dose as necessary.

Antitoxin.

This is a proprietary antipyretic, not to be confounded with antitoxin derived from immunized animals.

Antitussin.

This is a 5% ointment of difluoridiphenyl which is prescribed chiefly as an ununction for whooping-cough, and is used also to some extent in tonsillitis and in inflammatory pharyngeal affections.

In applying for whooping-cough, an amount of about the size of a walnut is well rubbed in into the neck, breast, and back between the shoulders. The skin is first prepared by washing well

with warm soapsuds and drying with a rough towel.

Anytin.

This is an interesting substance discovered some time ago by Heimers and now revived on account of the oily products prepared with it. It is made as follows: Any of the hydrocarbons containing about 10% of sulfur are treated with concentrated sulfuric acid, then neutralized with ammonia, and the insoluble portion in water precipitated by alcohol. The product possesses a great solvent action on bodies ordinarily insoluble in water. The preparations made by dissolving such substances insoluble in water in anytin have been called Anytols. The hydrocarbons that have been used consist generally of mineral and resin oils. When perfectly dry this article is in the form of a powder, brownish-black in color, and very hygroscopic. It contains 16½% of sulfur and 4½% of ammonia.

Anytots.

See under Anytin.

Apallagin.

This is the mercury salt of nosephene. It is a yellow powder, soluble in ether. It should be protected from light. It is used as a surgical antiseptic especially on venereal sores.

Apergols. (211)

A mixture put up in capsules, each one of which is stated to contain:

Apiol	m. 5
Ergotin	gr. 1
Oil of savin.....	m. ½
Aloin	gr. ¼
Aromatics	q.s.

Apetol. (200)

This is the formula given on the label: "Nux vomica, gentiana purpurea, calumba iateorrhiza, quassia amara lignum, prunus virginiana, prinus verticillatus, simaruba amara, spirea tomentosa, cinchona rubrum, sumbul moschatus, aurantii cortex, aromatics, vinum xericum fortior."

Aphrodine. (53)

This is stated to contain calcium glycerophosphate, hemoglobin, soluble ferric phosphate, and zinc phosphid combined with 1/60 grain of strychnine nitrate to each tablet.

Aphrodisiac Elixir.

See Elixir Aphrodisiac.

Apiol.

This is a green, somewhat thickish liquid which is derived from parsley. It is used principally as an emmenagogue in doses of 2 to 8 minims 2 or 3 times daily. It is also used as an anti-periodic.

Apioline.

This is derived from parsley but according to Chapoleaut is quite different from apiol. It comes in capsules each containing three minims each of apioline. 1 of these is to be taken 3 times a day for several days preceding and during menstruation.

Apioloids. (187)

These are capsules, the composition of which is given as follows:

Apiolol (saturated sol. in parsley oil), (equal to 7½ m. green apiol).....	m. 3
Extract of water pepper.....	gr. 1
Ergotin	gr. 1
Savin oil.....	gr. ½
Aloin	gr. ¼

Apocodeine Hyarochlorid.

This is a derivative of codeine. It is a grayish, hygroscopic powder, freely soluble in water. It has been used as an expectorant and sedative, chiefly in chronic bronchitis, the dose being ¼ to 1 grain. It has lately been vaunted as a laxative by hypodermic use, 30 to 40 minims of a 1% solution being the usual dose per injection for this purpose.

Apolysin. (Monoparaphenetidin-Citric Acid.)

This resembles phenacetin very closely in composition. It is a yellowish-white crystalline powder of acid taste. It is soluble in 55 parts of cold water, 1 part

of hot water; also soluble in alcohol and glycerin. It is an analgesic and antipyretic in hemicrania, sciatica, pneumonia, typhoid fever, etc.

Dose: 8 to 20 grains.

Aquamiel.

This is a preparation examined by Dr. Kebler who found it to consist of 97½% of water, 2% of alcohol and ½% of non-volatile matter which contained a small amount of sugar. The solution was colored with caramel and sweetened with saccharin. It was claimed that this preparation was made from a plant grown in Mexico. It was claimed for it that it is an excellent agent to stimulate the growth of certain organic tissues.

Arabian Balsam.

The following formula has been credited to S. W. Rogers of Harvard, Mass.:

Cottonseed oil.....	fl.oz.	15
Oil of origanum.....	fl.oz.	1
Oil of turpentine.....	fl.oz.	½
—D. C.		

Arabin.

This is believed to be the same as Acacine, which see. It is used as an emulsifier.

Arecoline.

This is a liquid alkaloid derived from the areca nut. It is miscible with water, alcohol and ether.

It is used as an anthelmintic in doses of from 1/20 to 1/16 grain. It is a powerful heart poison and hence care should be taken in administration.

The hydrochlorid of arecoline is a colorless soluble crystalline salt which has the same properties.

Argentamine. (Ethylenediamine-Silver-Phosphate Solution.)

This is an 8% solution of silver phosphate in a 15% aqueous solution of ethylenediamine. It is a colorless, alkaline liquid, turning yellow on exposure to light and hence should be kept in dark bottles.

It is an antiseptic and astringent like corrosive sublimate, but does not coagulate albumen. It is used in gonorrhea as an injection in a solution of 15 grains to 3 to 16 fluidounces of distilled water in anterior urethritis and 15 grains to 1 to 3 ounces of water in posterior urethritis. It is also used in eye affections in 5% aqueous solutions 2 to 4 times daily.

Argentum-Crede.

This is the same as Collargol, which see.

Argonin. (Silver-Casein.)

A soluble silver salt containing casein with 4.25% of silver. It is in fine white powder and does not coagulate albumen. It is an antiseptic like argentamine, and is used in a 1 to 2% solution. It is readily soluble in hot water, ammonia increasing its solubility. Light decomposes the solution and hence it should be freshly prepared. It is used mainly in gonorrhea in 2 to 5% aqueous solutions.

Argyrol. (Silver-vietillin.) (18)

This occurs in brown scales, containing 30% of silver. It is very soluble in water and its solutions are said to keep without deterioration. It is said to be non-irritating, even in strong solutions. It is used for the same purposes as the other soluble salts of silver, for gonorrhea and infectious diseases of the eye. For gonorrhea it is used in 2 to 5% injections and for other purposes in 5 to 25% solutions.

Arhovin.

This is a combination of diphenylamine and thymol-benzoic acid. It occurs as a liquid of aromatic odor and burning taste; it is insoluble in water, soluble in alcohol, ether and chloroform. It is used internally in gonorrhea in 4 minin capsules several times daily.

Aristochin. (Aristoquin—Diquinine Carbonic Ester—Carbonyl Quinine.)

This is a white, absolutely tasteless powder, insoluble in water, sparingly

soluble in alcohol. It is incompatible with acids because they decompose it, gradually liberating quinine.

It is used for the same purpose as quinine, but is said not to produce any disturbance and is said to be notably free from any tendency to produce cinchonism.

Aristol. (Dithymol-Diiodid.)

This is a reddish-brown, bulky powder, insoluble in water and glycerin, only slightly soluble in alcohol, and freely soluble in ether, chloroform, collodion, and fixed oils and melted fats. It is decomposed by heat and by alkalis. It and its solutions should be kept in dark bottles. It is an antiseptic agent which has largely replaced iodoform for wounds, ulcers, burns, scalds, diseases of the skin, eye, ear and nose, etc., It is used as a dusting powder, or in the form of ointment with lard, lanolin, etc., or in solution in collodion, or in other ways that may suggest themselves as suitable.

Aristolol.

This is the name given a sterilized 10% solution of aristol in oil of sesame. It is said that this preparation never becomes rancid or decomposed. It is intended for various troubles in ophthalmic practice, such as accidental burning of the cornea, etc., with caustic alkalis.

Armenian Pills.

Balsam of copaiba.....	parts 14
Magnesia, calcined light...	parts 2
Cubeb, powder.....	parts 7
Armenian bole, powder....	parts 7

Heat the copaiba until it acquires the consistence of a plaster, that is, until most of the volatile oil has been dissipated, then mix it with the magnesia and set it aside that the mass may set. Next add the powdered cubeb and Armenian bole, and mix intimately. Make the mass into pills of 8 grain each and roll them in Armenian bole.—Schacht.

Arnold's (Seth) Anti-Bilious Pills.

These are stated by the manufacturers to contain aloes, jalap, "podoph," extract of belladonna, croton oil and oleoresin of ginger.

Arnold's (Seth) Cough Killer.

The manufacturers state that it contains squill, ipecac, wild cherry, nitre, morphine and chloroform.

The amount of morphine in the form or sulfate is $\frac{1}{8}$ grain, of chloroform, $\frac{1}{8}$ minim, to the fluidounce. It also contains 15% of alcohol.

Arolax. (Aromatic Laxative.) (16)

This is stated to be an agreeable laxative, cathartic and stomachic tonic for infants, children and adults, each fluidram containing cascara 1 grain, succus rhei (Sinense) 5 drops, sodium phosphate 10 grains, and aromatic cordial, q. s.

The circular issued by the manufacturers mentions the Sinense rhubarb or rheum officinale, which is the Chinese or East India rhubarb. Reference is also made to combining cascara sagrada with rhubarb. The bottle is directed to be shaken before use.

Arophene.

This contains about 1½% of cocaine hydrochlorid, also carbolic acid, chloral, glycerin, and oil of rose. It is used as a dental anesthetic.—Sadtler.

Arrhenal. (Disodium Methyllarsenate.)

This is in colorless crystals, efflorescent, of alkaline taste, and readily soluble in water but sparingly in alcohol. It is an arsenic compound which is considered therapeutically an improvement over sodium cacodylate. It is used as a substitute for the inorganic compounds of arsenic in tuberculosis, malaria, skin diseases, etc. The dose is $\frac{1}{8}$ to 1 grain.

Arsenauro. (Solution of Bromids of Gold and Arsenic: Barclay.)

This, the manufacturers claim, contains, in every 10 drops, $\frac{1}{32}$ grain of gold bromid and $\frac{1}{32}$ grain of arsenic bromid.

Arsenhemol. (Arsenated Hemol.)

It is a brown powder, compound of hemol with 1% of arsenous oxid.

This is an alternative and hematinic, a substitute for arsenic without untoward effect on stomach.

*Dose: $1\frac{1}{2}$ grains, in pills, 3 times daily, increased every 4th day by $1\frac{1}{2}$ grains, until 15 grains are taken per day.

Arsycodile. (Sodium Cacodylate.)

This is marketed in pills, suppositories, and solutions for hypodermic use and for rectal injection. It is highly recommended for tuberculosis and is also used for dermatoses, diabetes, cancer of the stomach, goitre, malarial fevers and neurasthenia. The dose is $\frac{1}{8}$ to $\frac{1}{2}$ grain.

Arthrosia Pills. (212)

These are stated to contain salicylic acid, extracts of colchicum and poke, podophyllin, quinine sulfate, and capsicum, quantities not stated.

Artol. (76)

This is described as a bland non-irritating oil derived from petroleum. It is used as a vehicle for medicated sprays.

Artoline. (76)

This is described as a purified, semisolid, white emollient from petroleum, to be used as a vehicle for ointments.

Asapol. (Calcium Betanaphtholaphammonosulfonate—Abrastol.)

A whitish, odorless powder, decomposing near 50° C. (122° F.) It is soluble in 1 part of water, 2 of alcohol, but insoluble in ether.

It is an antiseptic, antirheumatic, antithermic, etc., in diphtheria, rheumatism, gout, typhoid fever, influenza, etc. It is used as an antiseptic in 5% solution.

Dose: 15 to 60 grains daily.

Asepsin.

See Gaultherine.

Aseptic or Aseptinic Acid.

An aqueous solution of 5 parts of boric acid in 1,000 parts of hydrogen peroxid (5%), with or without 3 parts of salicylic acid.—Thomas.

Asepsin.

See Antisepsin.

Aseptin.

This is a meat and milk preservative said to be composed of:

Borax	parts 2
Alum	part 1
—Nat. Dr.	

Aseptine Powder. (154)

This is described as being composed of "benzo-boric acid," salol, aluminum and zinc sulfates, phenic and thymic acids, menthol, eucalyptol, and methyl salicylate.

Aseptol.

This is a $33\frac{1}{3}\%$ solution of orthosulfocarboic acid. It is a dark syrupy liquid, miscible with water, alcohol and glycerin. The odor is similar to carbolic acid in place of which it is used in cystitis, skin diseases and diphtheria. It is said to be less irritating than carbolic acid. It is used in solutions of 1 to 10%.

Aseptolin-Edson.

This is stated to be a solution of 0.02 Gm. pilocarpine carbolate in 100 Cc. $2\frac{3}{4}\%$ carbolic acid. It is an antitubercular and antiperiodic which is used only hypodermically. In phthisis 5 Cc. is used once a day, the dose being increased daily by 0.5 Cc. until 7 Cc. are reached. In malaria 6 Cc. are injected over the abdomen on each side of median line twice the first day, and for 6 days following half this dose is injected daily, and for 2 weeks thereafter every third day.

Aspirin. (Acetylsalicylic Acid.)

This is a white powder, of an agreeable, slightly acid taste. It is soluble in 100 parts water but readily in alcohol and ether. It is decomposed in solution and is incompatible with alkalies.

It is best preserved by itself in powders or capsules. It is used as a substitute for salicylic acid and salicylates in rheumatism, fevers, etc. The dose is 15 grains 3 or 4 times daily.

Astringent and Antiseptic Comp. (97)

This is stated to be a combination of thymol, menthol, eucalyptol, cinnamic, phenic and boric acids, with potassa alum. It is an impalpable powder for making solutions for the treatment of diseased mucous surfaces.

Athenstædt's Comp. Tr. Iron.

This is a German proprietary remedy. Dieterich says the following makes a similar preparation:

Iron saccharate, 10%.....g.	22
Distilled water.....g.	570
Simple syrup.....g.	240
Alcohol.....g.	165
Citric acid.....g.	0.20
Tincture of orange peel.....g.	30
Aromatic tincture.....g.	0.75
Tincture of cinnamon.....g.	0.75
Tincture of vanilla.....g.	0.75
Acetic ether.....drops	2

Dissolve the iron saccharate in the water, add the other ingredients, and filter if necessary.

Atoxyl. (Metaarsenic Anilid.)

This is a white, odorless, tasteless, crystalline powder, soluble in water. The dose per diem 1 to 3 grains administered subcutaneously. It contains 38% of arsenic but is much less poisonous than other arsenic compounds. It is used for the same purpose as other arsenic compounds.

Atrabilin.

This is described as a yellow, opalescent, liquid extract of the suprarenal capsules. It is used for functional hyperemia and other affections of the eye in this mixture: Atrabilin, 4; boric acid, 1; distilled water, 20.

Aubergier's Paste of Lactucarium.

The following formula for a lactucarium paste, presumably Aubergier's formula, is taken from Bouchardat's Formulary:

Jujube paste.....gm.	100
Alcoholic extract of lactucarium.....gm.	1
Tincture of tolu.....gm.	2

In making the original, undoubtedly the paste prepared from jujube fruit is used in the above.

Aubergier's Syrup.

This is stated to contain 1/10% of extract of Aubergier's lactucarium and 6/100 of a milligram per gram.

Auritone. (63)

Each ten drops are stated to contain 1/32 grain each of the bromids of gold and arsenic bromids.

Ayer's (J. C.) Cherry Pectoral.

According to the revised formula each fluidounce represents

Heroin.....gr.	1/8
Wild cherry.....gr.	6
Grindelia robusta.....gr.	6
White pine.....gr.	4
Senega.....gr.	4
Bloodroot.....gr.	2
Rio ipecac.....gr.	2
Citric acid.....gr.	2
Terpin hydrate.....gr.	1
Glycerin.....dr.	4
Water, to make.....fl.oz.	1

It is stated to be non-alcoholic.

Ayer's (J. C.) Hair Vigor.

This is stated to contain alcohol, 15%; cantharides, sodium chlorid, sage, quinine, sulfur, glycerin, water, and perfume.

Ayer's Malaria and Ague Cure.

Each fluidounce is stated to represent

Quinia.....gr.	8
Cinnamon.....gr.	8
Jamaica ginger.....gr.	8
Cloves.....gr.	4
Peppermint.....gr.	8
Orange peel.....gr.	12
Alcohol, to each fl.dr.....m.	12 1/2
Glycerin, syrup and water.	

Ayer's Pills.

Each one is stated to contain

Jalap.....gr.	1/3
Ginger.....gr.	1/3
Aloes.....gr.	1/4
Colocynth pulp.....gr.	1/8
Podophyllin.....gr.	1/10
Gamboge.....gr.	1/20
Oil of peppermint.....gr.	1/50
Oil of spearmint.....gr.	1/100

Ayer's (J. C.) Sarsaparilla.

According to the manufacturers, each fluidounce represents

Sarsaparilla root.....	gr. 10
Yellow dock root.....	gr. 8
Licorice root.....	gr. 8
Red cinchona bark.....	gr. 6
Buckthorn bark.....	gr. 4
Stillingia root.....	gr. 4
Burdock root.....	gr. 3
Senna leaves.....	gr. 2
Black cohosh root.....	gr. 2
Poke root.....	gr. 1
Potassium iodid.....	gr. 4
Glycerin	dr. 3½
Flavoring: Oil sassafras, oil wintergreen.	

Water, to make.....fl.oz. 1

It is stated to be non-alcoholic.

Azoa. (Rat Virus.) (159)

This is a biological product, a disease-producing virus for the destruction of rats, mice and field animals; it infects them with a disease that kills in from 8 to 14 days. This disease is readily communicated to other animals of the same kind, but is harmless to human beings as well as to such animals as dogs, cats, fowl, etc. It is prepared in powder form and is to be mixed with oatmeal.

Bana—Diastase. (100)

This is described as "a starch-converting ferment of vegetable origin, capable of converting, under favorable conditions, 150 times its weight of starch into maltose and sugar."

Barclay & Harvey's Antibilious Pills.

The principal ingredient is compound extract of colocynth.—H.

Barr's Dental Anesthetic.

This is an alcoholic solution of oils of clove and peppermint.—Sadler.

Barrall's Antiasthmatic Cigarettes.

These consist of absorbent paper rolled up and satuated with potassium nitrate and infusion of herbs similar to Espic Cigarettes.—H.

Barry's Tricopherous.

According to N. I., a substantially similar preparation is made as follows:

Castor oil	fl.oz. 1
Alcohol	fl.oz. 5

Oil of lavender.....	drops 5
Oil of bergamot.....	drops 2
Color, pink with alkanet root.	

According to statement on the package, it contains 81% of alcohol.

Bartholow's Elixir Gentian with Tincture Chlorid of Iron. (133)

Each fluid-dram is stated to contain 4 grains of gentian and 4 grains of citrochlorid of iron.

Barutin. (Barium Theobromine and Sodium Salicylate.)

This is a white, odorless, crystalline powder, of a sweetish taste, soluble in water. It contains 25½% of theobromine and is used as a diuretic in doses of 5 to 10 grains in sweetened solution, avoiding acid syrups.

Basicin.

This is a compound of quinine hydrochlorid and caffeine, containing 65% of the former and 35% of the latter. It is a white crystalline powder soluble in 1 part of water. It is given for mouth and subcutaneously in doses of 3 to 8 grains for migraine, influenza, rheumatism, etc.

Basicin Oil.

This is a mixture of 2 parts of basicin, 15 parts of chloroform, 5 of alcohol, and 18 of olive oil. It is used as an embrocation to assist the action of the basicin administered simultaneously instead of the basicin when the latter is not well borne by the stomach.

Basol.

This is a disinfectant similar to liquor cresoli compositus U. S. P.; it is said to contain 50% of cresol.

Bassorin Paste.

This is a new ointment vehicle. It is a smooth, homogeneous paste, resembling petroleum in consistency. It dries on the skin and can be removed readily by washing with water.

Bates' Salve.

Beeswax	av.oz. 2
Amber resin.....	av.oz. 3
Linseed oil.....	fl.oz. 10
Red lead.....	av.oz. 4
Boil with constant stirring until the whole is dark brown.—B & C. Dr.	

Bateman's Lotion.

Corrosive sublimate.....gr. 2
Compound spirit of lavender.fl.oz. 1
Waterfl.oz. 4

Dissolve the corrosive sublimate in the spirit, and add the water.

It is used in cutaneous eruptions.—Cooley.

Battley's Sedative. (Battley's Solution of Opium.)

This is an extinct English patent preparation. See Solution of Opium, Sedative of the N. F.

Baume Analgesique, Bengue's.

This is stated to contain menthol, methyl salicylate and lanolin. It is in the form of an ointment, put up in collapsible tubes.

Baunscheidt Oil.

Baunscheidt was a German charlatan who claimed to cure rheumatic and other diseases by means of what he called a "lebens-wecker," i. e., "awakener" or "revulseur." This consists of a number of sharp-pointed needles set in a bed of hard rubber. By means of a spiral-spring arrangement these needles are driven into the skin over the seat of pain, not deep enough to draw blood, while into the wounds produced is rubbed the "Baunscheidt oil." This is an irritating substance and produces papular eruptions similar to those produced by croton oil. The effect is that of a powerful counter-irritant. In medicine this treatment is known as acupuncture. Formulas for the oil are given by Hager as follows:

I.

Euphorbium, powderdr. 3
Cantharides, powder.....gr. 110
Olive oil.....fl.oz. 8
Macerate for 7 days and filter.

II.

Euphorbium, powder.....gr. 140
Mezereum, cut fine.....gr. 280
Cantharides, powder.....gr. 30
Alcohol, absolutefl.dr. 9
Etherfl.oz. 1½
Olive oil.....fl.oz. 8
Mix the two powders, alcohol and

ether, in a closed vessel, macerate for 7 days, agitating occasionally; then add the oil, macerate again for 7 days, strain, heat the colature gently so as to expel the ether, and filter.

Bechol.

See Elixir Pinus Compositus.

Becker's Eye Balsam.

According to Parrish's Pharmacy this salve resembles it:

Calaminegr. 90
Tuttygr. 90
Red oxid of mercury.....gr. 6
Camphorgr. 60
Sweet almond oil.....fl.dr. 1
White wax.....av.oz. 1½
Butter, fresh (unsalted)..av.oz. 8

Beckwith's Hog Cholera Remedy.

This, according to a patent specification, consists of equal parts of mandrake, sulfur, sodium bicarbonate, charred coffee and potassium chlorate.

Beecham's Pills.

An approximate formula is the following:

Aloesgr. 480
Rhubarbgr. 90
Sodium sulfate.....gr. 24
Saffron, truegr. 24
Make into 3 grain pills.—Ind. Ph.

Bejean's Gout Specific.

According to an analysis by Hahn and Holfert, this consists of extract of gentian, 5 parts, potassium iodid and sodium salicylate, each 4 parts, water. 80 parts, alcohol, 20 parts, and oil of wintergreen, enough for flavoring.—Apoth. Ztg.

Bell's Syrup of Codeine. (20)

This is stated to contain ⅓ grain of codeine phosphate; ¾ grain of terpin hydrate; ½ grain of eucalyptus extract and ¼ grain of ipecac to the dram, in a vehicle containing a little sugar.

Belloc's Charcoal Lozenges.

According to Hager each one contains 1 grain of wood charcoal.

Benesol. (110)

This is local anesthetic for dental use. It is said to be sterile solution of beta-

eucaïne, cocaine hydrochlorid, carbolic acid, menthol, eucalyptol and amyl nitrite in distilled water. It is used hypodermically.

Benzaceticin. (Acetoamidomethyl-salicylic acid.)

This is in colorless crystals, which are almost insoluble in water, freely soluble in alcohol.

It is recommended as an antineuralgic in doses of 8 to 15 grains.

Benzanilid. (Phenylbenzamid.)

This is a white powder, soluble in 58 parts of cold and 7 parts of hot alcohol, but is almost insoluble in water. It is used as a children's antipyretic, that is, it is a mild antipyretic especially suited for children.

Dose: 2 to 10 grains for children ranging in age from 1 to 12 years.

Benzartol. (76)

This is a combination of the antiseptic and aromatic principles of gum benzoin with artol (which see).

Benzoglycine. (195)

This is described as compounded from the antiseptic constituents of thyme, eucalyptus, methyl salicylate and Chinese peppermint, each fluidram also containing the equivalent of 1½ grains of pure boracic acid combined with benzoic acid.

Benzoinol.

It is said by the proprietors to be "benzoic balsam," dissolved in a specially prepared, pure petroleum oil.

Betanaphthol. (Betanaphthol Benzoate.)

This is a whitish powder, soluble in chloroform and alcohol, almost insoluble in water. It darkens with age.

It is used as an intestinal antiseptic in diarrhea and typhoid fever, like betol, the dose being 3 to 8 grains several times daily.

It has been recommended for external use in the form of a 3 to 10% ointment for psoriasis, eczema, scabies, etc.

Benzosol. (Benzoyl-Guaiacol—Guaiacol Benzoate.)

This is a colorless, crystalline powder, inodorous, tasteless, insoluble in water, readily soluble in alcohol. It contains 54% of guaiacol. It is used as an antiseptic in the treatment of phthisis, typhoid fever, diabetes, etc. It is said to be non-irritating. It is used as a substitute for guaiacol and creosote.

Dose: 4 grains, increased to 12 grains, three times daily.

Benzosalin.

This is the methyl ester of benzoyl-salicylic acid is therefore an analog of aspirin acid like it is used for rheumatic and neuralgic affections in doses of 3 to 15 grains several times a day. It is in white, almost tasteless, needle-shaped crystals, soluble in alcohol, insoluble in water.

Benzoyl Peroxid.

This is made by the action of sodium peroxid on benzoyl chlorid. It is a white crystalline substance, sparingly soluble in water, readily soluble in alcohol, soluble to the extent of 2 or 3% in oils. It is used to some extent as an application to burns as it deadens the pain and appears to promote healing.

Benzozone.

This is now known as Acetozone, which see.

Berthe's Syrup of Codeine.

According to Hager, this is a solution of 1 g. of codeine in 125 g. of simple syrup.

Beta-Eucaïne.

See Eucaïne.

Betanaphthol.

See Naphthol (Beta).

Betanaphthol Benzoate.

See Benzonaphthol.

Betanaphthol-Bismuth.

See Orphol.

Betol. (Naphthalol, Naphtosalol, Salinaphthol, Betanaphthol Salicylate.)

This is a white, inodorous, insipid powder, melting at 95° C. It is soluble

in 3 parts of boiling alcohol, also in ether, but almost insoluble in water or glycerin. It is an internal antiseptic, antizymotic, etc., in putrid processes of the intestinal tract, cystic catarrhs, etc., being used like salol. Like salol it is split up by the alkaline intestinal fluids. It is also used as an antirheumatic.

Dose: 5 to 10 grains 4 times daily.

Betul-Ol. (8)

On the label this is described as "mentho-menthyl-oleo-salicylate chemically combined with 2% of chloral." On a circular it is stated to be a 2% solution of menthol in a methyl ester of the salicylic radical. It is also described as a compound methyl salicylate of *Betula lenta*.

Biodal.

Chemically this is moniodobismuth-methylene dicresotinate. It is used as a surgical antiseptic as a dusting powder for wounds.

Bioferrin. (103)

This is stated to be prepared as follows: The blood of healthy oxen is freshly drawn and is treated with ether, after removing the fibrin. The ether dissolves a certain part of the blood, and serum which separates contains the hæmoglobin. This is then freed from any ether that may have remained by means of a current of sterilized air, and is mixed with 20% of glycerin and 4% of aromatic tincture. No heat whatever is used in this process; on the contrary, the temperature is lowered artificially during manufacture. The preparation is said to contain the constituents of the blood, especially oxyhemoglobin, in an unaltered state, and occurs as a blood-red fluid of pleasant taste and odor.

Bioforin.

This is described as a granulated powder consisting of calcium glycerophosphate, 50, extract of kola, 20, extract of cinchona, 10, extract of coca, 5, chocolate, flavored with vanilla, 40, sugar, 875.

Biogen.

This is described by the makers as containing 33½% of magnesium dioxid, $Mg\ O_2$, a new chemical compound discovered by Dr. Elias of Berlin; it is stated to yield a high percentage of nascent oxygen in the economy. It is an odorless, tasteless, insoluble white powder, non-irritant and non-astringent. It is recommended in infantile gastric and intestinal troubles, in anemia, pneumonia, asthma, etc. The dose is 5 to 15 grains.

Bioplasm. (24)

This is described by the makers as a "tissue food." It is a light gray, sweet powder, soluble in water. The dose is 5 to 15 grains, several times a day.

Bismal. (Bismuth Methylenedigalate.)

This is a gray-blue, bulky powder, which is soluble in alkalies, but insoluble in water or in the gastric juice. It is used as an internal astringent, especially in diarrheas not benefited by opiates, such as chronic diarrheas.

Dose: 2 to 5 gr. every 3 hours or several times daily, in wafers or powder.

Bismon. (Colloidal Bismuth Oxid.)

This is product by the action of bismuth salts upon an alkaline aqueous solution of protalbin or sodium lysalbin. It contains 20% of metallic bismuth and is soluble in both hot and cold water. It is non-toxic and is borne by delicate stomachs in 5 or 10% solutions.

Bismoepsin Tablets. (138)

These are stated to contain bismuth subnitrate, pepsin and ginger in combination with pleasant aromatics. It is recommended for many gastric complaints.

Bismutan.

This is a combination of bismuth, resorcin and tannin. It is used as an anti-diarrhea remedy in doses of 8 to 15 grains.

Bismuth Agaricinate.

This is a white, tasteless powder, insoluble in water, employed in the night sweats of phthisis, intestinal catarrh, etc., in doses of 5 to 15 grains.

Bismuth and Hydrastia.

See Blenol.

Bismuth Betanaphthol.

See Orphol.

Bismuth Beta-Naphthol Comp. (141)

This is put up in tablets, each one of which contains

Bismuth betanaphthol	gr. 3
Guaiacol	gr. $\frac{1}{4}$
Thymol	gr. $\frac{1}{8}$
Eucalyptol	gr. $\frac{1}{8}$

Bismuth Cinnamate.

See Hetoform.

Bismuth Formic-Iodid. (141)

This is a yellowish powder, insoluble in water. It is stated to be composed of formaldehyde, gelatin, boric acid, bismuth subgallate, alum, iodine, and acetanilid, containing 13 $\frac{1}{3}$ % of the latter. It is used as an antiseptic dusting powder.

Bismuth Formic-Iodid Ointment.

This is stated to be composed of 60 grains of bismuth formic-iodid, 20 grains of peru balsam, and 1 ounce of benzoinated petrolatum.

Bismuth Oxyiodopyrogallate.

This is a fine, amorphous, yellowish-red powder, insoluble in water and the usual solvents, and permanent in air and light. It is recommended as a powerful surgical antiseptic, not so readily decomposed by water as the other bismuth preparations. It has been used as an application to wounds to promote cicatrization.

Bismuth Oxyiodotannate.

See Ibit.

Bismuth Phosphate.

See Bisol.

Bismuth Pyrogallate.

See Helcosol.

Bismuth Salicylate.

There are two salicylates of bismuth, one being basic, the other acid. The former should always be used when "bismuth salicylate" is specified. It contains 65% bismuth oxide and 35% salicylic acid. It is a whitish, odorless, tasteless, permanent, microcrystalline powder which is soluble in acids and alkalies with decomposition; insoluble in water, alcohol and ether.

It is recommended in gastric and intestinal affections in doses of 5 to 15 grains, administered several times daily; in typhoid fever, in 10 to 20 grain doses, repeated every hour for about 10 hours. The good results are attributable to the fact that the combination is readily borne by the stomach.

Bismuth Subgallate.

See Dermatol.

Bismuth Subiodid or Oxyiodid.

This is a brownish-red, amorphous, inodorous, insoluble powder. It is used as an external and internal antiseptic in suppurating wounds, ulcers, gonorrhea, etc., gastric ulcerations, typhoid fever, etc.

Dose: 5 to 10 gr. daily.

Bismutal or Bismutol.

This is said to be a mixture of soluble bismuth phosphate and sodium salicylate.

Bismuthal. (142)

This is the name given by this firm to a "lac bismuthi cum pepsino."

Bismutose. (Bismuth Proteinate.)

This is a combination of bismuth with albumen containing 22% of metallic bismuth. It is prepared by treating a solution of the albumen of eggs with a pure solution of bismuth nitrate in a solution of sodium chlorid. The coagulated compound is washed, dried and powdered. It is a greenish-yellow, odorless, tasteless powder, insoluble in water and alcohol, but soluble in solutions of the alkalies. It is of value as an intestinal astringent in the diarrheas of children.

The dose is 15 grains for very young infants and upwards, every hour.

Bisol (Bismuth Phosphate).

This is a white powder containing about 20% of bismuth oxid, besides some bismuth phosphate. It is soluble in 3 parts of water, heat, alkalies and acids rendering the solution turbid.

It is used as an intestinal antiseptic and astringent in acute gastric or intestinal catarrh, etc.

Dose: 8 grains several times daily.

Blackburn's Casca Royal Pills.

These are stated to contain castor oil, cascara, wild lemon, black cherry root, sulfur, nux vomica, ginger, and pepsin.

Blair's Gout and Rheumatic Pills.

A correspondent of the N. I. states that they are composed of acetic extract of colchicum and extract of henbane (proportions not given.)

Blancard's Pills.

The following formula for similar pills is taken from Bouchardat's Formulary:

Iodin	gr. 63
Reduced iron.....	gr. 31
Distilled water.....	fl.dr. 2
Honey	gr. 75
Absorbent powder	gr. 125

Make into 100 pills and coat with an ethereal tincture of tolu.

The pills of iron iodid of the U. S. P. are practically the same.

Blancoline. (Ol. Paraffin. Pur.) (115)

This occurs in the solid and liquid forms. The solid is described as a perfectly white, odorless ointment conforming to U. S. P. requirements for pure petrolatum. The liquid is colorless and odorless.

Blandine Comp. (141)

Each fluidounce is stated to contain

Menthol	gr. $\frac{1}{3}$
Thymol	gr. $\frac{1}{6}$
Eucalyptol	gr. $\frac{2}{5}$
Camphor	gr. $1\frac{1}{3}$
Oil of wintergreen.....	m. $1\frac{1}{2}$
Hydrastine hydrochlorid.....	gr. $1\frac{1}{40}$

In combination with "blandine," a neutral, colorless mineral oil.

Blatta Insect Powder.

These formulas have been given for it:

I.

Persian insect powder.....	av.oz. 8
Borax	av.oz. 8
Sulfur	av.oz. 4
Oil of eucalyptus.....	fl.dr. 2

II.

Persian insect powder.....	av.oz. 8
Borax	av.oz. 8
Sulfur	av.oz. 4
Eucalyptus leaves.....	av.oz. 4
Mix and reduce to fine powder.	

Blaud's Compound. (108)

Tablets each said to contain:

Blaud's mass.....	gr. 5
Corrosive sublimate.....	gr. $1\frac{1}{80}$
Strychnine sulfate	gr. $1\frac{1}{60}$
Arsenous acid.....	gr. $1\frac{1}{50}$

Blennostasine. (121)

This occurs in the form of small, yellowish, odorless, very bitter crystals; it is insoluble. It is said to be "a bromin derivative of cinchonidine, yielding, on analysis, results agreeing with the empirical formula $C_{19}H_{24}N_2OBr_2$."

The formula for cinchonidin being $C_{19}H_{22}N_2O$, the formula given would correspond to $C_{19}H_{22}N_2O (HBr)_2$, or, in other words, the substance may be a hydrobromate (bromid) of cinchonidine.

It is used as a remedy for la grippe, colds, and hay fever. The dose is 1 to 4 grains every hour.

Blenol. (Solution Bismuth and Hydrastia). (131)

This is described as a sodution of the double citrate of bismuth and hydrastine (the white alkaloid of golden seal.)

Blucaloids. (187)

These are capsules of methylene blue and Australian eucalyptus oil, and are intended to be used as an antimalarial.

Blush of Roses.

This is a copy of the formula sent out a few years ago:

Epsom salt.....	oz. 16
Water	oz. 48
Alcohol	oz. 8

Corrosive sublimate.....gr. 5
Ammoniadrops 20
Oil of rose.....sufficient

Dissolve the salt in the water, the corrosive sublimate and oil in the alcohol, mix the two solutions, filter and add the ammonia.

This was recommended as an application to the face instead of face powder.

Blutan.

This is a carbopate solution of peptonized acid-albumin-iron-manganese, free from alcohol and containing 0.6% of iron and 0.1% of manganese. It is also put up with iodine and bromine, the former containing 1/10% of iodine, the latter 1/10% of bromine.

Boerhave's Anti-Asthmatic Elixir.

Licorice root.....gr. 180
Calamusgr. 120
Elecampanegr. 120
Orris root.....gr. 60
Aniseedgr. 60
Canada snake root.....gr. 30
Camphorgr. 10
Alcoholfl.oz. 16

Some formularies give diluted alcohol as the menstruum.—Bouchardat's Formulary.

Bonjean's Elixir de Sante.

Tincture of bitter orange...g. 25
Oil-sugar of anise.....g. 10
Oil-sugar of caraway.....g. 10
Oil-sugar of peppermint...g. 10
Spirit of ether.....g. 15
Infusion of tea.....g. 100
Simple syrup.....g. 150
—H.

Boonkamp's Bitters.

Orange berries.....g. 100
Gentiang. 60
Orange peel.....g. 30
Cascarillag. 30
Cinnamong. 25
Curcumag. 15
Cloveg. 15
Rhubarbg. 7.5
Alcoholg. 750
Waterg. 1650
Sugarg. 250
Oil of anise.....drops 40

Mix, macerate for several days, express and filter.—H.

Boracetanile. (221)

This is an antiseptic powder, composed, according to the manufacturers, of:

Acetanilidpart 1
Boric acid.....parts 3

Boral. (Aluminum Boro-tartrate.)

This is in white crystals, of sweet, astringent taste, and soluble in water.

It is used as a disinfectant and astringent in inflammations of the nose and throat chiefly. It is applied in substance or in solution, with addition of glycerin.

Boralid.

This is said to be a mixture of equal parts of acetanilid and boric acid. It is used as a dusting powder.

Boroline. (28)

This is stated to be composed of boric acid, alum and menthol with "antiseptic acids of the coal tar series."

Borcherdt's Malt Extract with Yerba Santa Comp.

Each teaspoonful contains

F. E. yerba santa.....gr. 1
Ammonium chlorid.....gr. 1
Heroingr. 1/48

Bordet's Hair Tonic.

Carbolic acid.....fl.dr. 2
Tincture of cardamom....fl.dr. 2
Tincture of nux vomica...fl.oz. 1
Comp. tinct. cinchona....fl.dr. 4
Cologne water.....fl.dr. 4
Cocoonut oil, to make....fl.oz. 16
—A. D.

Borhaver's Vegetable Stomach Preservative.

According to Hager, this is composed of 140 g. of alcohol, 76 g. of sugar, 1 g. of aloes, 23 g. of extractive matter from cinnamon, galangal, zedoary, cloves, angelica, clove, gentian and quassia, and 200 g. of water.

Borine.

This is stated to be composed of the active constituents of styrax benzoin, gaultheria procumbens, spiræa ulmaria, solidago odora, hamamelis virginica, the stearoptens of thymus serpyllum, eucalyptus globulus, and mentha arvensis, with boracic acid.

Bornyval. (Borneol Isovalerianate.) (172)

This is the isovalerianic ester of borneol. It is a colorless liquid of aromatic, valerian-like odor and a faint taste of valerian. It is said to fully represent the active constituents of valerian root. It is prescribed in nervous disorders in 5 grain capsules, 1 to be taken after meals.

Boro-Chloretone. (159)

This is a mixture of 1 part of chloretone and 3 parts of boric acid. It is an antiseptic and is applied as a dusting powder to wounds, burns, scalds, ulcers, insect stings, etc. It is a local anesthetic so that it allays pain when applied to a wound.

Boro-Fluorine.

See Stafford's Boro-Fluorine.

Boroformalin. (Boroformol.) (67)

An antiseptic liquid, stated to contain "borosalicylic-glycerole," "benzoresorcinol," menthol, thymol, eucalyptol and formalin.

Borol. (159)

Each fluidounce is stated to represent

Sodium borate.....	gr. 12
Sodium bicarbonate.....	gr. 12
Sodium benzoate.....	gr. 5
Menthol	gr. $\frac{1}{8}$
Eucalyptol	gr. $\frac{1}{4}$
Thymol	gr. $\frac{5}{16}$
Glycerin	m. 90
Oil of pinus pumilio.....	q. s.

This should not be confounded with another preparation of the same name which is a melted mixture of boric acid and sodium or potassium bisulfate.

Borolyptol. (Formolyptol.) (158)

An antiseptic liquid stated to contain, according to the manufacturer, 5% of "aceto-boro-glyceride," 0.1% of formaldehyde, and pinus pumilio, eucalyptus, myrrh, styrax and benzoin. It contains 8% of alcohol.

Boromenthol.

Boromenthol Bengue Pills are stated to be composed of menthol, cocaine hydrochlorid and sodium borate.

Waterbury's Boro-Menthol is an antiseptic liquid, each fluidram of which is stated to contain 2 grains of "benzoboric acid" and the antiseptic principles of thyme, eucalyptus, baptisia, gaultheria and mentha arvensis.

Boro-Naphthol Soap. (131)

This is described as combining the antiseptic gaultherine, boroglyceride and pure betanaphthol with a bland non-irritating soap.

Borophenol.

This is prepared by allowing dried borax to absorb carbolic acid.

Borosol.

This is a colorless liquid containing, according to various analyses, aluminum tartrate, boric acid, salicylic acid, and free tartaric acid in aqueous solution.—Coblentz.

Borosalyl.

Boric acid.....	parts 25
Salicylic acid.....	parts 32
Water	sufficient

Triturate the acids with a small quantity of water to a smooth paste, dry and reduce to powder.

Boro-Salicylate.

A similar product is made by triturating together 5 parts of sodium salicylate with 4 of boric acid and a small amount of water, drying and powdering.

The "Boss." (Prescription 49.) (187)

An anti-gonorrheal remedy, an injection and pills being put up in one package.

A fluidounce of the injection is stated to consist of

Hydrastine (white alkaloid).....	gr. $1\frac{1}{4}$
Zinc sulfate.....	gr. 1
Boric acid.....	gr. 5
Carbolic acid.....	gr. $\frac{1}{8}$

The pills are stated to contain each	
Copaiba	gr. $1\frac{1}{2}$
Oleoresin of cubeb.....	gr. 1
Ferrous sulfate, exsiccated.....	gr. $\frac{2}{3}$
Carbolic acid.....	gr. $\frac{1}{3}$
Extract of belladonna.....	gr. $\frac{1}{8}$
Extract of aconite.....	gr. $\frac{1}{10}$
Oil of peppermint.....	m. $\frac{1}{10}$

Botot's Eau Dentifrice. (Eau de Botot.)

Anise seed.....g.	100
Clove	25
Cassia bark.....g.	25
Cochineal	5
Vanilla	1.5
Alcohol	1000
Rose water.....g.	300
Tincture of ambergris.....g.	1.5
Oil of peppermint.....g.	10
	—H.

Boules de Mars. (Boules de Nancy.)

According to Hager, these are prepared by heating 100 parts of tartrate of iron and potassium with 20 parts of distilled water and 1 part of powdered gum arabic on a water bath until the mass may be formed into balls on cooling. This is then made into balls weighing 35 to 36 g. which are to be dried in a moderately warm place when they should weigh about 30 g. They may then be coated with mucilage of acacia to which a small amount of tincture of nutgall has been added to impart a shiny black appearance.

Bourdalle's Ethyl-Methyl Chlorid Mixture.

This is used for producing local anesthesia, and is said to be a mixture of chemically pure ethyl chlorid and methyl oxid, proportions not being given.

Bovinine.

The manufacturers published this formula:

Defebrinated bullock's blood.....	65%
Desiccated egg albumen.....	19%
Bourbon whiskey.....	10%
Pure glycerin.....	5%
Boracic acid.....	1%

Boyveau-Laffeteur Root.

According to Hager, this is similar to compound syrup of sarsaparilla.

Bracelin Remedy for Diphtheria.

The remedy consists essentially of chlorin deprived of its suffocating, irritating qualities by an emollient corrective. The value of the "corrective" is not so much due to the agents used as to the process of manufacture in making the combination. Properly

made, the results will be satisfactory, if improperly combined the results will be disappointing. This is the result of my repeated trials and clinical experiments carried on during a period of over two years. Two liquids are used, which are for convenience named "Bracelin Chlorin Bactericide," "No. One" and "No. Two." "B. C. B. No. 1" is set free by the corrected chlorin in "B. C. B. No. 2." "B. C. B. No. 2" is added to "B. C. B. No. 1" in the proportion of 1 to 5 parts slightly warmed and the vapor inhaled as directed. Some diseases, such as diphtheria and pneumonia, require its use once each hour, others but 4 or 5 times a day. I am now prepared to give my formula to the profession for trial in the treatment of diphtheria and throat and lung diseases, viz.:

Formula of Bracelin's Chlorin Bactericide.—Solution No. 1:

Solution zinc chlorid.....	parts 20
Solution arsenic chlorid.....	parts 30
Hydrochloric acid.....	part 1
Water	parts 49

Solution No. 2:

Solution chlorinated soda,	
standardized to 2.6%	
available chlorin	parts 70
Corrective	parts 30

Note.—The corrective consists of menthol, camphor, eucalyptol and methyl salicylate dissolved in alcohol and water.

—P. M. Bracelin, M. D.

Bradycrotine.

Examination showed it to contain bromids and caffeine but not antipyrin or cocaine; it also contains syrups, etc. The bromids consist chiefly of potassium and sodium with some ammonium.—N. I.

Brandsanal.

This is a remedy for burns consisting, according to the manufacturers of carbolic acid 1 part, picric acid 7 parts, glycerin 23 parts, and distilled water 1,000 parts.

Brandreth's Pills.

According to Hager, these consist of gamboge, podophyllin, evaporated poke-

berry juice, saffron, clove and peppermint oil.

According to Dr. D. S. Clark, in A. D., the following is the formula:

Socotrine aloes.....	gr. 120
Gamboge	gr. 60
Castile soap.....	gr. 30
Extract of colocynth.....	gr. 20
Oil of peppermint.....	drops 2
Oil of cinnamon.....	drop 1
Acacia and alcohol of each,	sufficient
Make 80 pills.	

Brandt's Swiss Pills.

The following formula has been given by Brandt:

Extract of aloes.....	gr. 30
Extract of wormwood.....	gr. 30
Extract of buckbean.....	gr. 30
Extract of achillea moschata (very closely allied to yar- row)	gr. 30
Extract of speedwell root or mountain parsley (bergpeter- silienkraut)	gr. 45
Gentian powder.....	sufficient
Make 100 pills.	

Feldhaus has examined the pills, and found 37% aloes (not extract) and 50% gentian powder made into pills with gentian, buckbean or wormwood extract.

Brassicon.

Oil of peppermint.....	f.l.dr. 1
Camphor	3
Ether	f.l.dr. 2
Alcohol	f.l.dr. 6
Essential oil of mustard.....	drops 12
—Sddeutsche Apoth. Ztg.	

Briant's Sirop Antiphlogistique.

Hager states that 1,000 g. of this syrup are made from 60 g. of pectoral fruit, 8 g. of pectoral tea (see N. F.), 4 g. of red poppy, 90 g. of gum arabic, 60 g. of mucilage of althea, 30 g. of mucilage of linseed, 600 g. of sugar, and a sufficiency of water. The "pectoral fruit" is composed of equal parts of figs, dates (deprived of stones), raisins and jujubes.

Brinkerhoff's Ulcer Specific.

According to Medical Waif, the following is said to be the formula:

Carbolic acid, crystal.....	gr. 2
Solution iron subsulfate.....	dr. 1

Glycerin	dr. 2
Distilled ext. witchhazel.....	dr. 5

To 1½ ounces of water add 30 minims of this "specific" and half a teaspoonful of starch and inject into the rectum every night. It is used for rectal ulcers. For ulcers in ano, 10 to 15 drops of the "specific" are injected into the canal.

British Oil. (Betton's British Oil.)

I.	
Oil of juniper.....	f.l.dr. 1
Oil of turpentine.....	f.oz. 1
Oil of amber.....	f.oz. 4
Linseed oil.....	f.oz. 12
Barbadoes petroleum.....	f.dr. 4
American petroleum.....	f.dr. 4
—Parrish.	

II.

Oil of turpentine.....	f.oz. 5
Barbadoes tar.....	av.oz. 2
Oil of rosemary.....	f.l.dr. 2
—Cooley.	

Bromalin. (Bromethylformin.)

It is in colorless laminae or white crystalline powder, which is freely soluble in water. Do not confound this with bromelin.

It is used as an antiepileptic as a substitute for the bromids.

Dose: 30 to 120 grains per day, in wafers, or in mixture with syrup of orange-peel.

Bromamid. (Tribromanilin Hydrobromid.)

This is in colorless, tasteless odorless crystals, insoluble in water, sparingly soluble in alcohol. It is used as an antineuralgic in doses of 10 to 15 grains.

Bromanodyne.

This is a hypnotic preparation, each fluidram of which is stated to contain 15 grains each of potassium bromid and chlorid hydrate, and ½ grain each of extracts of henbane and cannabis indica.

Brom-Eigon.

This belongs to the class of compounds known as "eigons." They are made from albumin. This compound contains 11% of bromin. It is a white powder, nearly free from odor and taste.

insoluble in water. It has no free bromin and only traces of hydrobromic acid.

It is marketed in the powder form, also as a wine, each tablespoonful of which contains 1 grain of bromin in combination.

Bromelin.

This is the digestive principle of fresh pineapple juice. It is said to act like pepsin, and papain digesting proteids. Heat destroys it. It may be isolated by adding an excess of common salt to pineapple juice. Do not confound this with bormalin.

Brometone. (Acetone-Bromoform.) (159)

This is in fine, white, prismatic crystals, of camphoraceous odor and taste. It is slightly soluble in water, soluble in alcohol and ether. It contains 77% of bromin.

It is claimed to have the anodyne and sedative action of the bromids without the disadvantage of producing bromism. The dose is 5 grains, dry or in capsules, 2 or 3 times a day.

Bromidine. (215)

A hypnotic, each fluidram of which is stated to contain $7\frac{1}{2}$ grains each of chloral hydrate and potassium bromid, and $\frac{1}{8}$ minim each of fluid extracts of henbane and cannabis indica.

Bromine-Iodine Compound.

This is described as a perfect, permanent, aseptic solution of iodine, bromine, phosphorus, thymol and menthol, chemically united.

Brominol. (128)

This is a combination of iodine and oil of sesame, similar to bromipin. It is recommended for epilepsy.

Bromipin. (130)

This is a bromine addition product of sesame (benne), oil containing 10% of bromine in organic combination. It is prepared by action of bromine chlorid on sesame oil, in sufficient quantities, theoretically calculated to produce the required bromination.

It is a yellow, oily liquid, of a purely

oleaginous taste, and having a sp. gr. of about 0.995.

It acts like the bromids, but as it yields bromine more slowly it is thought to have less tendency to produce bromism. The combination is not broken up in the stomach but a portion of the bromine is split off when it enters the intestine. The oil with the remaining bromine is easily absorbed, and similarly to other fats it is largely deposited in the tissues where it is slowly split up. It is given in doses of 1 teaspoonful, increased in cases of epilepsy to 2 to 8 teaspoonfuls. It may be given pure, flavored with oil of peppermint or in emulsion with syrup and peppermint.

It is also sold as a (diluted) $33\frac{1}{3}\%$ brominated oil, in capsules each containing 2 grains, and in tablets each containing 20 grains of the $33\frac{1}{3}\%$ of oil.

The following emulsion is recommended by Dr. Spratling:

Bromipin	f.oz. 2
Simple syrup.....	f.oz. 2
Spirit of peppermint.....	f.dr. 2
Mucilage of acacia.....	f.oz. 4

Brom-Lecithin.

This is a preparation of bromine and lecithin containing 30% of bromine. It is made by dissolving lecithin in chloroform, saturating with bromine, and then evaporating the solution to dryness in vacuo. It forms colorless, wax-like masses. It is used as a sedative in nervous disorders. The dose is 1 to 3 grains 3 times a day.

Bromo-Caffeine. (105)

This is stated to combine the active principle of guarana with excess of combined hydrobromic acid; the preparation more than equals 1 grain of hydrobromid of caffeine in each heaping teaspoonful.

Bromochinal. (Bromoquinol — Quinine Dibromsalicylate.)

This is in yellowish, bitter crystals, sparingly soluble in water, alcohol or ether. It is similar in action to quinine sulfate, but has hypnotic as well as febrifuge properties.

Bromocoll.

This is a combination of bromin, tannin and gelatin containing 20% of bromin. It is a yellowish, odorless, tasteless powder, insoluble in water and alcohol, soluble in alkaline liquids. It is used as a substitute for the bromids in epilepsy and other nervous disorders. It is also used externally as an antipruritic in various skin affections, either as a 20% ointment or a 10% solution.

Bromodine. (76)

Each fluidram is stated to contain
 Chloral hydrate.....gr. 15
 Potassium bromid.....gr. 15
 Ext. cannabis indica.....gr. $\frac{1}{8}$
 Ext. henbane.....gr. $\frac{1}{8}$

Bromoform.

This is a volatile liquid which decomposes readily on exposure to light and air and must consequently be kept in dark or amber bottles, and be well stoppered; is almost insoluble in water, and has a pleasant taste. It is very heavy, having the sp. gr. 2.83.

It is used only in whooping cough. The dose depends on the severity of the case. For children of 1 year of age and under, 2 to 3 drops 3 times a day; children from 2 to 4 years of age, 3 to 4 drops 3 to 4 times daily; children up to 8 years of age, 4 to 6 drops 3 or 4 times a day. The doses should be cautiously increased by 1 drop the third day, in severe cases the second day.

Scoville recommends the following mixture of bromoform which contains but little (or no) alcohol, is very palatable, admits of accurate dosage, and is susceptible to change in dosage without altering the proportion of the other ingredients:

Bromoformfl.dr. 1
 Tincture of tolu.....fl.dr. 2
 Mucilage of acacia.....fl.dr. 4
 Simple syrup.....fl.oz. 1
 Spearmint water, to make...fl.oz. 4

Place the mucilage in the bottle, add an equal volume of syrup, then the bromoform and tincture in portions, shaking well after each addition. A thin

emulsion results, to which the rest of the water and syrup are to be added with agitation.

This emulsion slowly deposits but without separation of bromoform or tolu, and can be quickly made homogeneous again by slight agitation.

This mixture contains 2 minims of bromoform in 1 fluidram, and the amount may be increased or diminished if desired. Alcohol may be omitted altogether from the mixture by using syrup of tolu instead of the simple syrup and tincture of tolu.

The following agreeable mixture was devised and suggested by Bedford:

Bromoformm. 30
 Alcoholfl.dr. 4
 Glycerinfl.oz. 3
 Tinct. cardamon comp.....fl.dr. 4

Mix in the order given.

Bromoform Bronchial Anodyne. (143)

Each fluidounce is stated to contain:

Bromoformdrops 8
 Ammonium bromid.....gr. 24
 Bengoingr. 1
 Ipecacgr. $\frac{1}{2}$

It contains mostly glycerin instead of syrup as a vehicle.

Bromo-Hemol. (Hemol Bromid.)

This is hemol containing 2.7% bromin. It is a brown, insoluble powder. It is a nerve tonic and sedative in doses of 15 grains 3 times a day.

Bromol. (Tribromphenol—Bromphenol.)

This is a white crystalline powder or soft white crystals. It is easily soluble in alcohol, ether, chloroform and oils, less soluble in glycerin and diluted alcohol, almost insoluble in water. It is a surgical and intestinal disinfectant in wounds, typhoid fever, summer diarrheas, etc. It is used in 2 to 3% ointment or oily solution, or as dusting powder mixed with talcum.

Dose: Single, 1 to 3 grains; daily, 8 grains.

Bromolein.

This is an addition product of the unsaturated fatty acids of almond oil;

it contains 20% of bromin. It is an odorless, tasteless, yellow liquid which is used instead of the ordinary bromids.

Bromo-Mangan. (Liquor Ferri-Manganici Bromopeptonati "Dieterich.")

This is Ferro-Mangan "Dieterich" (which see) with the addition of 3% of bromopeptone. The latter contains 11% of bromin. It is a clear, dark brown liquid of agreeable odor and taste. It is a reconstructive tonic, blood-making adjuvant and a sedative, and is claimed to be useful wherever anemia is associated with nerve impairment, as in epilepsy, neurasthenia, hysteria, etc.

Bromophtharin.

Said to be a mixture of zinc oxid, calcium oxid, calcium carbonate, sodium sulfate, and sand.—Rundsch.

Bromoquinol.

See Bromochinal.

Bromotan. (Methylene Bromtannin Urea.)

This is a brownish-white, odorless, tasteless powder. It is used as a 10% dusting powder or a 10% ointment in skin eruptions, itching, rash, etc.

Brom-Protulin. (98)

This is a yellowish powder, of a characteristic bromin odor and taste. It contains 2.7% of phosphorus and 4% of bromin combined with albumin. It is used as a nerve nutrient in epilepsy, hysteria and other neuroses. The dose is 10 to 20 grains 3 times daily. It is put up in powder form and 4-grain tablets.

Bromural. (109)

This is in small, white, almost tasteless needles which are easily soluble in hot water, ether, alcohol or alkalies, but less readily in cold water. It is a nerve sedative and hypnotic for inducing sleep in functional nervous disorders. It is valueless in insomnia where pain, excitement or delirium exist. The dose as a nerve sedative is 5 grains, as a soporific 10 grains. It is supplied in the form of powder and 5-grain tablets.

Bronchiline. (162)

Each teaspoonful is stated to represent

Mullein	gr. 1½
Horehound	gr. 1½
Senega	gr. 1½
Ipecac	gr. 1½
Bloodroot	gr. 1½
White pine.....	gr. 1½
Wild cherry.....	gr. 2
Pine tar.....	gr. 1
Chloroform	gr. 1½

It contains about 1% of alcohol.

Bronchoids. (211)

A mixture put up in capsules each of which is stated to contain:

Heroin	gr. 1/16
Creosote	m. 1
Eucalyptol	m. 1
Terebene	m. 2

Bronchol. (141)

This is put up in the form of soft elastic capsules each containing:

Oil of sandalwood.....	m. 1½
Terebene	m. 1
Creosote	m. 1
Eucalyptol	m. 1½
Strychnine	gr. 1/100
Olive oil.....	m. 5

Brotanilid. (137)

The claim of the manufacturer is that this is a mixture of acetanilid, sodium bromid, caffeine citrate and sodium bicarbonate.

Brou's Injection.

See Injection Brou.

Brown's Hair Dye.

Pyrogallic acid.....	gr. 225
Sodium sulfite	gr. 38
Alcohol	fl.oz. 1
Water	fl.oz. 3

—N. I.

Brown's Male Fern Vermifuge.

The following makes a similar preparation (N. I.):

Fluid extract of male fern..	fl.oz. 3
Simple syrup	fl.oz. 5
Oil of wintergreen.....	drop 1

Buckingham's Whisker Dye.

According to Dr. Schacht, this consists of ½ gm. of silver nitrate and 2½ gm. ammonia mixed with 40 cc. distilled water.

Bullrich's Salt.

Sodium bicarbonate is now dispensed for this.

Bugeand's Tonic-Nutritive Wine.

Cocoa beans, freshly roasted
and coarsely powdered....gr. 100
Calisaya bark, contused.....g. 120
Cassia bark.....g. 10
Simple syrup.....g. 200
Sherry wine.....g. 200
Brandyg. 400

Macerate the cocoa with the brandy for 2 days, add the other ingredients, macerate for 8 days, agitating frequently, then filter.—H.

Bull's Blood Syrup.

Potassium iodid.....av.oz. 1½
Red iodid of mercury.....gr. 2
Tincture of poke root.....f.dr. 3
Comp. syrup of stillingia...f.oz. 6
Simple syrup, to make.....f.oz. 16
—Nat. Dr.

Bumsted's Gleet Cure.

The following is said to be the formula:

Zinc sulfate.....gr. 10
Extract of opium.....gr. 60
Glycerite hydratis, U. S. P...f.dr. 1
Glycerinf.dr. 4
Waterf.oz. 4
—W. D.

Burdock Seed Compound. (36)

This is stated to contain in each fluid-dram, burdock seed, bamboo brier root, stillingia root, red clover tops, each 10 grains, poke root, 6 grains, coriander seed, 3 grains, prickly ash berries and potassium iodid, each 1 grain.

Burin's Pills of Iron and Manganese Carbonate.

Ferrous sulfate, crystal.....gr. 150
Manganese sulfate, crystal...gr. 53
Potassium carbonate, pure...gr. 150
Sugargr. 40
Althea, powder, sufficient.

Triturate the two sulfates with the carbonate until reduced to a moist mixture, incorporate the sugar and althea, make a mass, and divide into 150 pills.

Each pill contains about $\frac{1}{2}$ grain of iron carbonate and $\frac{1}{2}$ grain of manganese carbonate.—H.

Burin-Dubuisson's Lozenges of Lactate of Soda and Magnesia with Pepsin.

Magnesium lactate.....gr. 50
Sodium lactate.....gr. 50
Pepsin, pure.....gr. 45
Sugarav.oz. 3
Tragacanthgr. 60
Watersufficient
Make into 100 troches.—H.

Burnett's Cocaine.

The manufacturers state that this preparation holds, in a liquid form, a large proportion of deodorized cocoanut oil. It contains 50% of alcohol.

Butipyrine.

This is another name for trigemine, a compound of butylchloral hydrate with pyramidon. See Trigemine.

Butler's Elixir of Brandy.

Nutmeggr. 40
Cardamomgr. 60
Rhubarbgr. 60
Lavender flower.....gr. 60
Cinnamongr. 60
Gingergr. 60
Extract of licorice, powder..gr. 360
Brandyf.oz. 16
Waterf.oz. 8

Mix the drugs, reduce them to coarse powder, macerate in the mixed brandy and water for 14 days, agitating thoroughly each day, and filter. It may also be prepared by percolation.—Lloyd's Elixirs.

Butyromel.

Fresh butter.....av.oz. 2
Honeyav.oz. 1

Mix until a homogeneous mass is obtained.—Coblentz.

Bynin. (2)

This is a thin extract of malt.

Bynin Amara.

This is described as an analogue of Easton's Syrup (syrup of the phosphates of iron, quinine and strychnine), but much pleasanter to take and easier of assimilation.

Bynin Emulsion.

This is described as an emulsion of cod-liver oil with calcium and sodium hypophosphites in "bynin."

Byno-Hemoglobin.

This is described as containing 1 dram of hemoglobin in 1 ounce of "bynin."

Byno-Hypophosphites. (2)

This is described as an analogue of compound syrup of hypophosphites, "bynin" (liquid malt) replacing the syrup.

Bynol.

This is described as "the perfected malt and oil, free from taste and odor of cod-liver oil."

Butyl-Chloral Hydrate. (Croton-Chloral Hydrate.)

This is in pearly white laminæ, having a pungent but not acrid odor and an acrid, nauseous taste. It is soluble in about 50 parts of water and in its own weight of glycerin or alcohol.

Its action is similar to that of chloral hydrate but it is less depressant and more analgesic. It has been especially recommended for facial neuralgia.

Byrolin.

This is a mixture of boric acid, glycerin and lanolin, intended for cosmetic purposes.

Cachet Hemo-Calx. (81)

Each cachet is stated to contain

Nuclo glycophos. calx.....gr. 5
Hemogallolgr. 2½
Arsenous acid.....gr. 1/60
Strych. phosph.....gr. 1/60
Quin. phosph.....gr. 1

"Nuclo glycoposph. calx" is described as a combination of nuclein and "glycophosphate" of lime.

Cacodyle Bengue Pills.

Each pill is stated to contain 2 centigrams of cacodylate of sodium.

Cacodylic Acid. (Dimethylarsenic Acid.)

This contains 54% of arsenic. It is in white, odorless crystals, soluble in water and in alcohol. It has been used in psoriasis, diabetes, leucocythemia, etc., in doses of ½ to 1 grain 3 or 4 times a day. The dose by injection is ⅓ grain every day or every other day. It is

now mostly superseded by its sodium salt.

Cafetonique. (105)

This is a granular effervescent preparation, each heaping teaspoonful of which is stated to contain 1 grain of caffeine, 5 grains of saccharated pepsin, 2 grains of bismuth citrate and 1/100 grain of strychnine.

Caffeine Sodio-Benzoate.

This is a preparation of the N. F. containing 50% each of caffeine and sodium benzoate. It is soluble in 2 parts of water.

Caffeine Sodio-Cinnamate.

See Hetol-Caffeine.

Caffeine Sodio-Salicylate.

This is a preparation of the N. F. containing 50% each of caffeine and sodium salicylate. It is soluble in 2 parts of water.

Caffeine Sulfocarbolate (or Sulfophenate).

It is in white, odorless, astringent, bitter, scaly crystals or powder, and is soluble in water.

It is used as an antiseptic and astringent in cholera morbus, infectious diarrhea, intestinal ulcer, etc.

Dose: 5 to 15 grains in solution.

Caffe-Bromide Compound. (17)

This is a granular effervescent preparation, stated to contain hydrobromic acid, caffeine and acetanilid, used for headaches, nervousness, etc.

Caffeetanilid. (17)

This is said to be composed of acetanilid, sodium bicarbonate and caffeine.

Caffeetanilid Compound.

This is stated to be composed of "caffeetanilid," 19 parts, capsicum 1 part, tincture of digitalis 12 parts, and monobromated camphor 2 parts.

Calcauro. (Solution of Bromid of Gold, Arsenic and Calcium.)

Ten drops of this are stated to contain 1/32 grain each of gold and arsenic bromides and 2 grains of calcium bromid.

Calcalith. (Calcium Carbonate Compound with Colchicine.) (1)

This is the formula given: Repurified calcium carbonate, 10 grains; lithium carbonate, 1 grain; colchicine, 1/500 grain; in aromatic combination. This is used as a remedy in various forms of uric acid diathesis.

Calcidin. (1)

This is described as "calx iodata" or "iodized calcium" and is stated to contain 15% of iodine.

Calcium Eosolate.

Chemically this is calcium trisulfoacetate. It is a gray powder of slightly pungent odor and acid taste. It is soluble in about 10 parts of water, very slightly soluble in alcohol, and is readily dissolved with the aid of hydrochloric or citric acid. It contains about 25% of creosote. It is used in diabetes and some cases of phthisis. The dose is 5 to 20 grains 3 times a day.

Calcium Glycerophosphate.

This is a white crystalline powder, soluble in 40 parts cold water but almost insoluble in boiling water or alcohol. According to the investigations of Dr. de Pasqualis, lecithin, the chief phosphorus constituent of blood, is decomposed during digestion into chlorin and glycerophosphoric acid; the latter thus represents the form in which phosphorus is assimilated and is indicated when it is desired to augment the amount of phosphorus in the system.

The glycerophosphates are therefore rational substitutes for phosphorus and may be given whenever the latter is indicated. They give striking results in exhaustion of the nervous system, whether due to metabolic loss or to insufficient assimilation. In various forms of phosphaturia and in many cases of neurasthenia, and in muscular atrophy, the treatment has been found beneficial, also in the pains of locomotor ataxia, in sciatica, lumbago, Addison's disease, rickets, osteomalacia, etc. The dose is 2 to 5 grains 3 times daily.

Calcium Ichthyol.

This is a calcium salt of sulfichthyolic acid, and is therefore the calcium analogue of ordinary ichthyol. It is a brown, tasteless powder.

Calder's Saponaceous Dentifrice.

The following makes a similar article:

Powdered castile soap.....av.oz 4
Precipitated chalk.....av.oz. 2
Magnesium carbonate.....av.oz. 1
Sugarav.oz. 1
Oil of wintergreen.....to flavor
—N. I.

Calisaya Cordial. (194)

Each fluidram is stated to contain
Calisaya, true.....gr. 5
Pepsin sac.....gr. 3
Erythrox. coca.....gr. 1
Iron pyrophos.....gr. 1
Viburnum opulus.....gr. 1
Gentiangr. 2
Strychnia sulph.....gr. 1/100
With vegetable aromatics.

Calolactose. (181)

The following is its composition according to the manufacturers:

Calomelpart 1
Bismuth subnitratepart 1
Milk sugar.....parts 8

This mixture is triturated by steam power for 12 hours.

Calomelol. (Soluble or Colloidal Calomel.)

According to the patent process, this is made by acting on a solution of sodium chlorid in the presence of a proteid with mercurous nitrate and precipitating the water-soluble colloidal salomel by means of alcohol. The precipitate is washed with alcohol, redissolved in water with the aid of a small amount of alkali, and from this solution the colloidal calomel is obtained either by evaporation or by precipitation with alcohol.

It is a grayish-white, odorless and tasteless powder; it is soluble in water, forming an opalescent solution, and is insoluble in alcohol. It is precipitated from its aqueous solutions by acids, the precipitate being redissolved by alkalis. It should be protected from light.

It contains 80% of calomel and 20% albuminoids.

Its action on the system is the same as that of calomel, but it is claimed to be superior because of its solubility in water, acting more rapidly and efficiently. The dose is the same as that of calomel. Externally it is used as a dusting powder, mixed with an equal quantity of starch, or starch and zinc oxid, or in the form of ointment.

Calomelol Ointment.

This is made by mixing 45 parts of calomel with 55 parts of lard. It is a substitute for mercurial ointment over which it has the advantage of cleanliness. The dose is 90 grains daily forunction in syphilis.

Calox. (121)

This is a dentifrice powder containing calcium dioxid. Patents were granted May 1904, and Oct. 1905, for dentifrices, the specifications for the first being as follows: A suitable dentifrice may consist for example of 95% of precipitated chalk, 3% of powdered castile soap, 2% of calcium dioxid, and flavoring and coloring matter as desired.

The wording of the second patent specifications is: A suitable dentifrice may consist of 96% of precipitated chalk, 3% of powdered castile soap, 1% of a percarbonate or perbonate of an alkali or alkaline salt, and flavoring and coloring matter as desired.

Camphacol. (116)

This is the camphoric acid ester of methylene diguaiacol and a related body to guaialin. It is a crystalline substance given in doses of 5 to 20 grains as an antispasmodic, sedative and internal antiseptic.

Campho-Ichthyol Ointment. (215)

This is stated to be composed of phenol camphor, ichthyol, zinc ozid, lanolin, and benzoinated lard.

Camphoid.

Collodion	part I
Camphor	part I
Absolute alcohol.....	part I

Campho-Phenique.

This is an efficacious antiseptic which is stated to contain 50% of carbolic acid in its constitution. It is also claimed to be a chemical combination containing in 1,000 parts, 495 parts of camphor and 505 parts of carbolic acid.

Campho-Phenique Powder.

The manufacturers state that "this substance is pure liquid campho-phenique held in a state of absorption by an inert, unirritating powder."

Camphor Phenate. (198)

This is described as a combination of phenol and champhor, as not miscible with water or glycerin, but may be diluted with a vegetable, animal or mineral oil or fat.

Camphorated Phenol-Petrogen. (221)

This is stated to contain 1 part of crystal carbolic acid, 3 parts of camphor, and 5 parts of liquid petrogen. It is used as an antiseptic application to wounds, boils, etc. See also Petrogen.

Camphoric Acid.

This is an oxidation product of camphor. It is in colorless crystals, melting at about 180° C. It is freely soluble in alcohol and ether, sparingly in chloroform, oils or water. It is used as an antiseptic, and disinfectant for typhoid stools. In 1 or 2% solution it is used as a gargle or spray in angina and bronchitis, in 3 to 6% solution for laryngeal tuberculosis. Internally it has been administered in doses of 15 to 30 grains, 3 times daily, to prevent the night-sweats of phthisis.

Camphoroxol.

This is described as a combination of hydrogen peroxid with some alcohol and 1% of camphor. It is used as an antiseptic application for ozena and otitis media.

Camphossil.

This is a condensation product of camphor and salicylic acid which forms a crystalline, fat-like paste, of soapy feeling and camphoraceous odor, insoluble

in water. It has the odor of camphor but is almost tasteless. It is given internally in the treatment of typhus fever and disorders of the intestinal tract. The dose is 8 grains.

Cancroin.

This is a serum introduced by Adamkiewicz as a remedy for cancer. It is furnished in different strengths.

Cande's Lait Antephelique.

According to Wittstein's analysis, this is composed of:

Corrosive sublimate.....g.	10
Ammonium chlorid.....g	1
Lead sulfate.....g.	7
Camphor	2
Egg white.....g.	140
Water	840
—H.	

Cannabin Tablets. (92)

The following formula is given:

Cannabin	gr. 1/10
Zinc phosphid.....gr.	1/10
Strych. phos.....gr.	1/40
Avenine	gr. 1/200

Cannabine Tennate.

A yellow or brownish powder of a slightly bitter but strongly astringent taste. It is sparingly soluble in water, alcohol or ether; quite readily soluble in acidulated water.

It is used as a hypnotic and sedative in hysteria, nervousness, etc.

Dose: 4 to 8 grains at bedtime in a powder with sugar. Maximum dose: Single, 15 grains; daily, 30 grains.

Cannabine itself is a liquid alkaloid derived from cannabis indica.

Cannabis Indica Cigarettes. (204)

These are stated to contain cannabis indica and harmless medicinal herbs. They are used for bronchitis, asthma, hay fever, etc.

Capillin.

This is described as a condensation product of tannin, chloral and resorcin, which has properties resembling captol, being used as a hair restorer and in the treatment of dandruff. Capillin hair restorer is made from capillin 2, chloral 2, salicylic acid 1, soap liniment 4, 70%

alcohol to make 200, oil of rose geranium and oil of lavender flowers, each 10 drops.

Caprenalin. (221)

This is described as the active pressor principle of the suprarenal capsules, made according to the process of Professor John J. Abel.

Capsic-Digest Tablets. (17)

These are put up in three styles. Formula A is composed of capsicum 1/10 grain, nux vomica ¼ grain, pepsin (1:3000), grain, pancreatin, diastase, lactic and muriatic acids and willow charcoal to make a 5-grain tablet.

Formula B has only ½ grain pepsin but enough of the last five ingredients are added to make a 5-grain tablet.

The laxative style contains 1/10 grain of capsicum, ¼ grain of extract of nux vomica, 1 grain of pepsin (1:3000), 1 grain of extract of cascara, and pancreatin, diastase, lactic and muriatic acids, and willow charcoal to make a 5-grain tablet.

Capsicol. (148)

This preparation is stated to represent olive oil, capsicum, camphor, turpentine, oil of origanum, oil of juniper and eucalyptol. It is used as counter-irritant application in rheumatism, sciatica, neuralgic gout, etc. It is put up in collapsible tubes.

Capsolin. (159)

This is stated to contain oleoresin of capsicum, camphor, and oils of croton, cajuput and turpentine. It is put up in collapsible tubes. It is recommended as a convenient, efficient and non-irritating substitute for mustard plasters, turpentine stupes and other domestic counter-irritants.

Captol.

This is described as a condensation product of tannin and chloral, having none of the objectionable properties of tannin nor the irritating ones of chloral, while it possesses a peculiar effect on diseased hairy scalp. It is in the form

of a dark-brown, hygroscopic powder, not easily soluble in cold water, more so in warm water and alcohol; it is decomposed by alkalis but not by acids. It is used as an application in the form of a 1 to 2% alcoholic solution to the scalp for dandruff and loss of hair due to dandruff. It is stated to produce rapid and effective results. It is also recommended as a prophylactic to prevent loss of hair.

The compound spirit of captol put up is said to consist of 2 parts each of captol, chloral hydrate and tartaric acid, 1 part of castor oil and 200 parts of 65% alcohol.

Carbenzol. (1)

This is described as "a bland, thin oil containing sulfur in natural combination. It is obtained by distillation from a bituminous shale carrying large quantities of animal matter. In odor and color it somewhat resembles ichthyol, but unlike this and similar products it is a natural oil, not a chemical production from the crude material. It does not stain the skin. Its odor (which is far from disagreeable) may be completely disguised by the addition of oil of eucalyptus or cassia. It may be applied full strength or it may be diluted with some bland fixed oil or liquid paraffin, or made into an ointment with wool fat, petrolatum or lard. It is recommended as an antiseptic, germicide and antipruritic in eczema, erysipelas, pimples, boils, herpes, carbuncle, etc.

There is also a Carbenzol Soap which is described as a non-alkaline, superfatted soap containing 10% of carbenzol.

Carbolate of Iodin Inhalant.

What is usually sold and used under this name is practically identical with the carbolized solution of iodine of the N. F., which is prepared as follows:

Compound tincture of iodine. fl.dr.	½
Carbolic acid, crystal, liquefied by gentle heat.....gr.	II
Glycerin.....fl.dr.	5
Distilled water, to make....fl.oz.	4

The compound tincture of iodine is

composed of 15 grains of iodine, 30 grains of potassium iodide and 1 fluidounce of alcohol.

Carbolineum Avenarius.

This is a proprietary preparation recommended for use in preserving woods from decay, dry rot, etc., by application as a paint. Dr. Baker, chemist in the laboratory attached to the appraiser's department at New York, analyzed it some years ago and found it to be a wood tar oil, of the sp. gr. 1.1235, and "the product of the destructive distillation of wood, certain of its characteristic constituents (particularly the terpene hydrocarbons) being wood tar derivatives not found in coal tar."

Carbo-Peptide Wafers. (88)

These are stated to contain pepsin, pancreatin and ptyalin.

Carbolic Smoke Ball.

This is composed chiefly of licorice root, flour, white hellebore and some tarry body having the odor of carbolic acid.—N. I.

Caripeptic Liquid. (199)

This is stated to represent all the concentrated, active enzymes of *Carica papaya* (papaw). It contains about 15% of alcohol.

Caripeptic Powder.

This is stated to represent the purified active enzymes of *Carica papaya* in an impalpable powder.

Caripeptic Tablets.

These are stated to contain the active digestive ferments of *Carica papaya* (papaw) with calcium glycerophosphate, ginger and aromatics.

Caripeptic Tablets with Charcoal and Soda contain the active digestive ferments of *Carica papaya* with willow charcoal, sodium bicarbonate and aromatics.

Carl-Aperient. (63)

This is stated to be an effervescent laxative, consisting of artificial Carlsbad salt reinforced with sodium phosphate and magnesium sulfate.

Carnogen. (6)

This is described as a glycerite of bone-marrow, containing 60% of red marrow and 25% of unaltered fibrin of ox blood, with albumin, suspended in glycerin. It is used as a hematinic, chiefly in pernicious anemia.

Dose: 1 to 2 tablespoonfuls 3 times daily, after meals.

Carnolin.

This is an aqueous solution containing 1½% of formaldehyde.

Carnos.

A recently introduced dietetic, said (Pharm. Centralh.) to be prepared from well-boiled yeast and germinating barley malt. It is in the form of an extract rendered palatable by means of salt and condiments.

Caroid. (100)

This is stated to be a concentrated extract of *Carica papaya* (papaw). It is in the form of a powder and is used as a digestive agency and an aid to impaired digestion. It is also put up as an essence in liquid form, also in tablets either plain or laxative (with cascara, podophyllin and ext. of belladonna), or with soda or charcoal or *nux vomica* or *bana-dia*stase.

Carriere's Compound Syrup of Eucalyptol.

Each fluidounce is stated to represent
 Eucalyptolm. 4
 Creosotem. 2
 Iodoformgr. 1
 Glycerin, syrup of tolu,
 eachsufficient

Carvacrol. (Oxycymol.)

This is a phenol extracted from various organum oils. It is a thick oily substance. It is an antiseptic, similar in properties to thymol.

Cascanata. (Elixir Cascanata.) (170)

This is described as combining the active principles of cascara sagrada, trifolium, rumex, gentian and rhubarb and holding in solution phosphate of soda and magnesia.

Cascara Carminative. (143)

Each fluidounce is stated to represent

Cascara sagradagr. 240
 Wahoogr. 24
 Blue flaggr. 16
 Sodium phosphategr. 40
 Sodium salicylategr. 16
 Aromatics.

Cascara Cathartic Pills, Hinckle's formula. (212)

Each pill contains

Cascaringr 1/4
 Aloingr. 1/4
 Podophyllingr. 1/6
 Extract of belladonna.....gr. 1/8
 Gingerinegr. 1/8
 Strychninegr. 1/60

Cascara Compound (Sydenham)

Each tablet is stated to contain

Cascaringr. 1/8
 Aloingr. 1/8
 Podophyllumgr. 1/12
 Extract of belladonna.....gr. 1/16
 "Gingerine"gr. 1/16
 Strychninegr. 1/120

Cascara Comp. Pills, Robin's.

See Robin's Pill Cascara Comp.

Cascara Compound, Tonic Laxative. (108)

Tablets each said to contain

Extract of cascara sagrada..gr. 2
 Podophyllingr. 1/8
 Extract of belladonna.....gr. 1/16

Cascara Cordial. (159)

It is stated on the bottle that each liter represents 250 grams of cascara and 37 grams of *berberis oquifolium*, and is flavored with carminatives and aromatics.

Cascara Evacuant. (159)

This is described as an active and agreeable preparation of the unchanged bitterless glucosides of cascara sagrada, possessing all the desirable laxative properties of this valuable drug. It is a dark red-brown liquid of a bitter but not unpleasant taste.

The dose as a laxative is 10 to 15 minims 3 times a day; as a purgative, 20 to 30 minims, morning and evening. One fluidram may be given in obstinate cases.

Cascara Laxative Tablets. (160)

Each tablet is stated to contain
Fl. ext. cascara.....m. 12
Comp. aloin powder.....gr. 1 2/5

Cascara-Peptonoids. (13)

Each tablespoonful is stated to represent:

Alcohol (by volume).....16.5%
Extr. cascara sagr. fl.....m. 30
Tr. nux vomica.....m. 1
Proteids (peptones and pro-peptones)5.25%
Lactose and dextrose11.3%
Cane sugar2.5%
Mineral constituents (ash).....0.95%

Cascara Potent, Fluid. (143)

This is described as a concentrated preparation of cascara sagrada nearly free from bitterness. Each pint represents 20 ounces of drug. Carminative aromatics are added to render the preparation more palatable and to counteract the griping tendency of the drug.

Cascara Tonic Laxative Globules. (159)

Each globule is said to contain 3 grains of the bitter glucosides of cascara sagrada suspended in a bland fixed oil to which aromatics have been added.

Cascarans. (20)

This is in the form of tablets which are prepared from cascara sagrada.

Cascarennia. (159)

Each fluidounce is stated to represent
Cascara sagradagr. 120
Sennagr. 120
Rochelle saltgr. 24
Chenopodiumgr. 8
Pumpkin seedgr. 8
Sodium bicarbonategr. 4
Aromatics.

Cascarets. (Candy Cathartic.)

These are tablets said by the manufacturers to contain cascara sagrada and senna combined with antiseptics and aromatics, each tablet representing 10 minims of fluid extract of cascara sagrada.

Cascarin.

Ordinary cascarin is believed to be merely powdered extract of cascara sagrada.

Cascarin Comp. Tablets. (182a)

Each pill is stated to contain 1/4 grain each of cascarin, aloin and podophyllin.

The No. 2 contain

Cascaringr. 1/4
Aloingr. 1/4
Podophyllingr. 1/6
Ext. belladonna leaves.....gr. 1/8
Oleo-resin of ginger.....gr. 1/8
Strychnine sulfategr. 1/60

Cascarine-Leprince.

Cascarine (usually spelled cascarin in this country) is the name given by Leprince to a constituent of cascara sagrada, isolated by him in 1892 and believed by him to be the active principle of the drug. It occurs in odorless, tasteless needles, insoluble in water, soluble in alcohol.

According to Laffond, it is cholagogue and laxative, but not a drastic purgative. The adult dose is 2 to 5 grains. It is put up for the market in the form of pills, one or two of which is a dose at bedtime.

Cascaroids. (89)

These are soft, elastic capsules, each containing 2 or 3 grains of extract of cascara sagrada.

Cascaroma. (142)

This is stated to be a palatable and effective preparation of cascara sagrada, a full-strength U. S. P. fluid extract. It contains the entire soluble constituents of the bark, the bitter principle being disguised (not removed).

Casc-Aromatic. (198)

This is described as a fluid extract of cascara sagrada deprived of its bitter principle and aromatized and sweetened.

Cassia Compound. (34)

This is stated to be "a palatable and efficient liquid laxative, cathartic and cholagogue, each fluidounce representing 50 grains of Alex. senna, 25 grains of jalap, resin of podophyllin 1/4 grain with aromatics."

Castoroids. (89)

These are soft, elastic capsules, each containing 1 gram of castor oil, $\frac{1}{4}$ drop of croton oil and $\frac{1}{2}$ drop of oil of anise.

Castrole. (22)

This is described as a powdered castor oil.

Catalgine.

This is stated to contain 20% of acetanilid with "benzo-salicylate" of ammonia, caffeine, potassium and sodium.

Catalysin. (17)

"The digestive ferments represented in this preparation are pork, rennet and poultry pepsin, pancreatin, ptyalin and diastase, associated with lactic and mucic acids."

Catani's Specific.

This remedy for uric acid diathesis is a mixture of

Lithium carbonate	part 1
Sodium bicarbonate	parts 2
Potassium citrate	parts 4
Mix well, reducing to fine powder.	
—Ph. Post.	

Catholicons.

The patent medicines known as "catholicons" are remedies designed for female complaints.

Caulophyllin Comp. Pills.

See Girard Uterine Tonic.

Cauvin's Pills.

These are a French preparation containing, according to Hager, the following:

Rhubarb	gr. 10
Gamboge	gr. 20
Aloes	gr. 30
Jalap	gr. 30
Divide into 30 pills.	

Cazeaux Nipple Ointment.

White wax.....	av.oz. 9
Sweet almond oil.....	fl.oz. 2
Honey	fl.oz. 1
Peru balsam	f.dr. 5
—Kilner.	

Cealgic.

This is stated to consist of acetanilid, caffeine citrate, ammonium chlorid, "neurodin," sodium bicarbonate, and digitalin. It is put up in powder and tablet forms,

plain and in combinations with codeine, heroin, quinine, and salol.

Celery, Caffein and the Bromides. (36)

A granular effervescent preparation for relieving migraine and nervous headaches.

It is said to have practically the same composition as their Celery and Caffein, *i. e.*, celery seed, 5 grains, "bromide of caffein and sodium," 1 grain.

Celery Cordial. (198)

Each fluidounce is stated to contain 48 grains each of kola, celery seed and viburnum, and 64 grains of coca leaves with aromatics.

Celloidin. (178)

This is the name given to a preparation of the character of purified pyroxylin, U. S. P. It is prepared by dissolving pyroxylin in a mixture of alcohol and ether, filtering, and recovering the solvent from the filtrate. It is supplied in shreds immersed in water. It is free from acids. Dissolved in ether and alcohol it forms a bright and clear collodion, no clearing or filtering being necessary. It is used for surgical, photographic and microscopic purposes.

Cellotropin. (Monobenzoyl-Arbutin.)

This is a white odorless, tasteless powder, sparingly soluble in water, readily so in alcohol. It is used in tuberculosis and scrofula.

Cellulin. (100)

This is described as a sugar, starch, fat and peptone-splitting ferment derived from fungi. It is marketed as a light brown powder and in tablet form.

Cellulo. (Oxychlorine Dressing.)

This is the formula given:

Glycerin	per cent 50
"Oxychlorine"	per cent 4
Cellulose	per cent 20
"Dehydrated silicate of aluminum with magnesia"	per cent 26

Cephalopin.

This is an oily extract of the fresh nerve substance and compounds soluble in oil such as myelin and lecithin. It is

recommended for hypodermic use in strychnine poisoning and nervous diseases.

Ceralin (Koempel). (182a.)

This is an antiseptic ointment which is stated to contain boric acid and "ben-zothymol."

Cerevisine.

This is described as "pure desiccated yeast."

Cerolin. (26)

This is a fatty substance derived from yeast. It is used internally in place of yeast for furunculosis, acne, etc., but is more cathartic than yeast. It is put up in pills each containing 1/10 gram.

Cetiacol.

See Palmiacol.

Chable's Sirop Adstringent.

This is a solution of 10 g. of iron citrate in 300 g. of simple syrup.—H.

Chalybeate Pills. (212)

These are stated to contain 1½ grains each of ferrous sulfate and potassium carbonate.

Pill Chalybeate Comp. are stated to contain 2½ grains of "chalybeate mass" and ⅓ grain of extract of nux vomica.

Pill Chalybeate Comp. Improved contain 1½ grains of "chalybeate mass" and 1/20 grain of extract of nux vomica.

Chambard's Purgative Tea.

According to Hager this is composed of senna leaves, strawberry leaves, hyssop leaves, speedwell leaves, calendula flowers, and elder flowers.

Chamomilla Comp. (76)

This is stated to be a diffusible nerve tonic, made according to the formula of Dr. Thos. A. McBride, and containing the mother tinctures of cinchona, chamomila, ignatia, phosphorus and nux vomica with aromatics.

Chapoteaut's Morrhuol.

See Morrhuol.

Chapoteaut's Phospho-Glycerate of Lime.

This is put up in the form of capsules, each containing 4 grains of this com-

pound; wine, containing 4 grains to the tablespoonful; and syrup, containing 4 grains to the tablespoonful.

Cheltenham Salt.

This is the formula according to Hager:

Sodium sulfate, dried,
Magnesium sulfate, dried,
Potassium sulfate,
Sodium chlorid, each, equal parts.

Chemical Food.

The preparation known by this name is the Compound Syrup of Phosphate of the N. F.

Chevalier's Life for the Hair.

Lead sulfidg. 0.8
Iron sulfidg. 0.1
Lac sulfidgr. 1.5
Glycering. 100
Waterg. 200

Flavor with rosemary and rose geranium oils.—Piper's analysis from H.

Chichester Mixed Treatment Pills. (33)

Each pill is stated to contain 1/20 grain of red mercuric iodid and 5 grains of potassium iodid.

Chinaphenin.

This is the quinine carbonic ester of phenetidin. It is a white, odorless and tasteless powder, sparingly soluble in water, readily soluble in alcohol. Acids dissolve it, but at the same time decompose it with the liberation of quinine, the mixture having of course the bitter taste of quinine.

It combines the antiperiodic properties of quinine with the analgesic power of phenacetin with the advantage of being without taste and of not producing cinchonism. It is used in la grippe, malaria, neuralgia, whooping cough, etc. It is given in doses of 5 to 20 grains; in whooping cough, 2 to 5 grains, according to age.

Chinofoamin.

This is described as a combination of quinic acid with hexamethylene tetramine, and is therefore the same as chinotropin, which see.

Chinol. (Chinoline or Quinoline Monohypochlorid.)

This is a white, crystalline powder, almost insoluble in water, soluble in alcohol. It is used as an antiseptic in doses of 3 to 5 grains.

Chinopyrin.

See Quinopyrin.

Chinosol. (Potassium Oxyquinolin Sulfate.)

It is in bright yellow crystals, of faint, aromatic odor and unpleasant taste, is freely soluble in water, sparingly in alcohol and ether. It is a powerful antiseptic and germicide and may be used for disinfecting the hands for surgical or gynecological work. The discoverer of it claimed it to be superior to corrosive sublimate and carbolic acid. It has been used to destroy the bacilli of typhoid fever, diphtheria, cholera, etc. It has also been used internally in gastrointestinal diseases.

Chinotropin. (Urotropin Quinate.)

It is a white powder readily soluble in water. It is said to liberate formaldehyde more freely than urotropin and thus its uric acid-solvent properties and its action upon the bacteria are more pronounced. It is used in gout and bacilluria in doses of 10 to 20 grains 2 or 3 times a day.

Chiodrastis. (211)

Each fluidram is stated to contain

Papain	gr. 1
Pancreatin	gr. 2
Hydrastis	gr. 2
Chionanthus	gr. 4
Cascara sagrada	gr. 5
Antiseptic oils and aromatics, q. s.	

The preparation also contains 14% of alcohol.

Chirata Compound. (40)

This is stated to contain nux vomica, 3 parts, cephalanthus occidentalis, 5 parts, acid nitrohydrochloric dil., 5 parts, swertia chirata, 10 parts, taraxacum, 35 parts.

Chloroethoform.

This is a name given to a mixture of chloroform with $\frac{1}{4}$ % of ethyl chlorid. It

is stated to be safer and to act more promptly than unmixed chloroform.

Chloralamid. (Chloralformamide.)

This is now recognized by the U. S. P. under the name chloralformamide. It is in colorless, odorless, bitterish crystals, soluble in 20 parts of water and $1\frac{1}{2}$ of alcohol, readily soluble in ether and glycerin. It is decomposed by hot solvents and alkaline liquids. It is used as a hypnotic in doses of 15 to 45 grains.

Chloral-Ammonium (Tri-chloramido-ethylc Alcohol.)

This is a white powder, soluble in alcohol, slightly soluble in water.

It is a hypnotic and analgesic in doses of 5 to 30 grains.

Chloralacid.

This is described as a chlorin substitution product of albumin containing 3% of chlorin. It is a yellowish-white powder, almost odorless and tasteless, and readily soluble in water. It is used in various gastrointestinal affections in doses of 10 to 30 grains before meals.

Chloral-Caffeine.

This is a white powder, readily soluble in water. It is used as an anodyne, antispasmodic, antirheumatic, and laxative in cases of obstinate constipation. The dose subcutaneously is 2 to 5 grains in divided doses, internally 3 to 8 grains at a dose.

Chlora-Kaline. (181)

This is a hypnotic, each fluidram of which is stated to contain 15 grains each of chloral hydrate and potassium bromid, and $\frac{1}{8}$ grain each of extracts of henbane and cannabis indica.

Chloralamid Elixir.

See Elixir Chloralamid.

Chloralia. (182)

Each fluidram is stated to contain "15 grains each of pure chloral hydrate and purified brom. pot. and $\frac{1}{8}$ grain each of gen. imp. ext. cannabis ind. and hyoscyam."

Chloralimid (not Chloral-amid).

This is in colorless, inodorous insipid crystals which are readily soluble in alcohol, ether, chloroform and oils, but is insoluble in water. Used as a hypnotic in doses of 15 grains.

Chloralose.

This is a compound of grape sugar and chloral. It is in fine, colorless needles, rather readily soluble in hot water and in alcohol, but is sparingly in cold water. It is used as a hypnotic.

Dose: 3 to 12 grains.

Chloralum.

Prof. Fleck made an examination, on behalf of the Saxon Government, of chloralum solution, chloralum powder and chloralum wool and wadding.

The liquid contained

Aluminum chlorid	13.90%
Calcium chlorid and sulfate.	3.11%
Iron chlorid	0.42%
Lead chlorid	0.15%
Copper chlorid	0.10%
Water, to mak.....	100.00%

The powder, in addition to the above salt, contained 0.72% of chlorid of arsenic and 32.15% of clay and sand. Fleck suggested that the solution was made as follows:

"A calcareous clay, containing but little iron, is dissolved as far as possible, in fuming hydrochloric acid. The clear concentrated liquid above the undissolved clay is drawn off in bottles and sold as chloralum." The name refers to its containing chlorid of aluminum. The residue with the liquid adhering, is evaporated in leaden pans, dried and sold as "chloralum powder." Cotton or wadding, soaked in the chloralum itself, wrung out and dried, furnishes the "chloralum wool and wadding." The arsenic, lead and copper found in it are impurities contained in the hydrochloric acid used as a solvent or they come from the vessels in which they are made.

Chlorbutanol. (Acetone-Chloroform.)

This chemical is sold commercially under the names chloretone and methoform, which see.

Chloretone. (Acetone-Chloroform.) (159)

This is a white, crystalline, volatile compound having a camphoraceous odor and taste. It is soluble in 125 parts of water, in fixed and volatile oils and in glycerin, freely soluble in alcohol, ether, and chloroform. It is local anesthetic which is weaker in action than cocaine but is strong enough frequently to stop vomiting from gastric irritation. It is used as a local anesthetic in dentistry, it is a powerful antiseptic and is used as a preservative. It is given internally in doses of 5 to 20 grains; hypodermically it is used in the form of a saturated aqueous solution. See Chlorobutanol.

Chloretone Inhalant.

This is a mixture of

Chloretone	parts 2
Camphor	parts 5
Menthol	parts 5
Oil of cinnamon.....	part 1
Liquid petrolatum.....	parts 187

It is used as an anodyne, antiseptic and emollient spray for the nose and throat.

Chlor-Lactated Pepsin Powder. (160)

This is the composition as given by the manufacturers:

Saccharated pepsin, U. S. P.
Pancreatin, N. F.
Diastase or ptyalin.
Lactic acid.
Hydrochloric acid.

For the elixir, see Elixir Chlor-Lactated Pepsin.

Chlorobrom.

This is an English specialty; it is an aqueous solution containing potassium bromid and chloralamid. It is used as a hypnotic and is advocated for seasickness.

Chlorol.

This is said (Arch. Med. Belge) to have the following composition:

Mercuric chlorid.....	part 1
Sodium chlorid.....	part 1
Hydrochloric acid.....	part 1
Copper sulfate.....	parts 3
Water	parts 1000

The sodium chlorid is added to render the solution more stable; the hydrochloric acid to prevent the decomposition of the corrosive sublimate in the presence of albuminoid matter; and the copper sulfate for its vomitive effects—in case the chloral should be taken internally by mistake.

Chlorolin.

This is a liquid disinfectant. It contains 20% of mono- and trichlorophenols. It is used as an antiseptic application to wounds in $\frac{1}{2}$ to 3% solutions.

Chloro-Phenique. (163)

This is described by the manufacturers as "containing 5% of chlorophenic acid combined with antiseptic essential oils, in aqueous solution, and is equal in antiseptic properties to a 20% solution of carbolic acid." It is said to be made by passing chlorin gas through phenol combined with the essential oils.

Chlorophenol.

This is formed by the action of chlorin on carbonic acid. It is a volatile liquid which is used as an antiseptic inhalant in diseases of the respiratory organs in the following mixture: Chlorophenol, 14; alcohol, 4; oil of clove, 1; menthol, 1 part, may be added. From 15 to 30 drops are to be inhaled at a time. It is also applied to wounds, ulcers, etc.

Chlorsalol.

See Parachlorsalol.

Chloryl.

See Anesthyl.

Cholelysin.

This is said to be a compound containing 20% of sodium oleate and 2.8% of albumen. It is used to stimulate the flow of bile and to counteract the tendency toward the formation of gall stones.

Chologestin. (189)

This is described as a combination of the "alkaline salt" of glycocholic acid

and sodium salicylate from oil of wintergreen, pure pancreatin, and pure sodium bicarbonate. It also contains 15% of alcohol. It is a brown liquid which is described as a digestive cholagogue.

Christadoro's Hair Dye.

No. 1 contains 60 gr. of pyrogalllic acid dissolved in 1 fluidram of alcohol and 4 fluidounces of distilled water.

No. 2 consists of 1 av. oz. of silver nitrate dissolved in 1 fluidounce of distilled water and 1 fluidounce of concentrated ammonia to which is added $\frac{1}{2}$ av. oz. of gum arabic dissolved in 3 fluidounces of distilled water.—Era Form.

Chroatol.

This is terpine iodhydrate made by the action of iodine upon oil of turpentine. It is used in some skin diseases.

Chromosot.

This is said to be chiefly sodium sulfite and sulfate. It is used as a disinfectant.

Chrysarobin.

This is a light yellow powder, very slightly soluble in water, slightly soluble in alcohol, ether and chloroform, freely soluble in alkalies. By oxidation it is converted into chrysophanic acid.

It is employed in the treatment of various skin diseases, in ointment of 10% strength.

It is now recognized by the U. S. P.

Chrysarobin, Oxidized.

This is prepared by the action of sodium peroxid on chrysarobin suspended in boiling water. It is a dark brown powder, insoluble in water, soluble in hot alcohol and chloroform. It is used in skin diseases in 5 to 10% ointments. It is said to be milder in action than chrysarobin.

Churchill's Syrup.

The syrup of hypophosphites U. S. P. is now dispensed for it. Originally it was made to contain 3 grains of calcium hypophosphite and 2 grains of sodium hypophosphite to the fluidram.

Cinchonia Mixture.

This has been said to consist of
Cinchonine alkaloidparts 12
Sugar of milk.....parts 60
Sodium bicarbonatepart 1

Cincho-Quinine.

This is a mixture of cinchonine, quinine, and other alkaloidal salts remaining after the extraction of quinine from cinchona bark.

Cineraria Maritima, Juice of.

This remedy was introduced from Venezuela, where the plant is indigenous, by a Dr. Mercer. It is recommended for arresting and improving partial blindness induced by cataract or other causes. Two drops of the juice are dropped into the pupil 3 times a day, continued for several months.

Cinnamic Acid. (Cinnamylic Acid.)

This is in white, odorless crystals, almost insoluble in cold water, more soluble in hot water, soluble in alcohol and ether. It has recently been lauded as an antitubercular remedy. It is used intro-venously in quantities of $\frac{1}{4}$ to $\frac{3}{4}$ grain in the form of a 5% oil emulsion with 0.7% solution of sodium chlorid twice a week. It is also applied as a 5% emulsion or alcoholic solution. In lupus it is applied in 5% alcoholic solution with 5% of cocaine.

Citarin. (Sodium Anhydromethylene Citrate.)

This is a white, granular, somewhat hygroscopic powder, having a faintly saline and acidulous taste. It is soluble in $1\frac{1}{2}$ parts of water, insoluble in alcohol. Its solutions split off formaldehyde when heated, especially in the presence of alkalis. Acids also decompose it.

This is one of the compounds which it is claimed increase the elimination of uric acid by forming very soluble compounds with that substance. It is recommended for gout and chronic rheumatism. The dose is 15 to 30 grains, largely diluted with water.

Citon Tablets.

These occur in two forms, white and brown. The white consist of $1\frac{1}{2}$ grains of paraphthalein, 8 grains of sugar and $\frac{1}{6}$ grain of menthol. The brown consists of $1\frac{1}{2}$ grains of paraphthalein, 8 grains of sugar, $1\frac{1}{2}$ grains of chocolate and $\frac{1}{30}$ grain of vanillin. They are used as purgatives. Made in Colmar, Germany.

Citrophen. (Paraphenetidine Citrate.)

This is in white powder or crystal of faint but sour taste, soluble in 40 parts of water.

It is an antipyretic and antineuralgic. It was introduced as a substitute for phenacetin.

Dose: 8 to 15 grains.

Citrosandalene. (41)

These are capsules stated to contain sandalwood oil and potassium citrate.

Citrozon. (42)

This is stated to be a mixture of vanadinic acid, sodium chlorid, sodium citrate and 30% of seidlitz powder, the whole being an effervescent mixture. Each 100 g. contains .005 g. of vanadinic acid.

Citrurea.

This is an uric-acid solvent in tablet form, which is said to be a mixture of urea, citric acid and lithium bromid.

Clafin's Mist. Phosphor. Co.

See Mixture Phosphorus Comp.

Clarke's Blood Mixture.

Potassium iodid	parts 40
Chloroform	parts 8
Alcohol	parts 150
Solution of potassa.....	parts 5
Water	parts 2250
Caramel	parts 50

—N. I.

Clavin.

This is a substance obtained from ergot. It occurs as a powder which is soluble in water but insoluble in alcohol and ether. Its aqueous solution soon undergoes decomposition. It is marketed in two forms of tablets, each containing $\frac{1}{3}$

grain of clavin, one form containing sugar and intended for internal, the other containing salt and intended for hypodermic use.

Claxton's Gout and Rheumatic Oil.

Ammonia liniment,
Alcohol,
Spirit of soap,
Spirit of camphor,
Tincture of myrrh,
Lard, equal parts of each.

—Drog. Ztg.

Cleary's Asthma Powder.

Stramonium leavesparts 30
Belladonna leavesparts 30
Potassium nitrateparts 5
Opiumparts 2
All should be in powder.

—Ch. & Dr.

Clerambourg's Grains de Vie.

According to Hager, these are similar to the following:

Cassia bark, powder.....gr. 30
Extract of cinchona.....gr. 75
Cape aloes, powder.....gr. 150
Syrup of orange.....m. 30

Make into pills each weighing 3 grains, or divide so that each pill will contain $1\frac{1}{2}$ grains of aloes and $\frac{3}{4}$ grain of extract of cinchona.

Clermont's Syrup of Arseniate of Iron.

According to Hager, a very similar article may be prepared by dissolving 1 g. of ferrous arsenite in a small amount of acetic acid, diluting with some water, neutralizing with sodium bicarbonate, diluting with water to 200 g. and in this liquid dissolving 300 g. of sugar.

Clifford's Shampoo Compound.

The following is claimed to be its composition (N. I.):

Boraxav.oz. 3
Potassium carbonateav.oz. 1

This is to be dissolved in 4 pints of water.

Clin's Lecithine.

See Lecithine Clin.

Clinton's Cascara Active. (29)

This is described as a palatable and highly active preparation of cascara sagrada, each imperial fluidounce representing one av. ounce of drug.

Cloftlin Emulsion. (46)

According to the statement of the manufacturers, the following is the composition:

Cod liver oil....oz. 4, by vol. 50%
Hypophosphite limegr. 48
Hypophosphite manganese .gr. 24
Glycerinfl.dr. $6\frac{1}{2}$
Glycerite of senega
(special)fl.dr. 1
Salts, solvents and emulsifying agents $38\frac{1}{2}\%$
Distilled water and flavoringq.s.oz. 8
Flavoring only $7/10\%$

Cobb's Pills.

Extract of henbane.....gr. 30
Extract of conium.....gr. 30
Extract of colocynth.....gr. 40
Extract of nux vomica.....gr. 4

Mix, make a mass, and divide into 30 pills.—Contributed to D. C.

Cocacaffeine. (105)

This is a granular effervescent preparation, each heaping teaspoonful of which contains $\frac{1}{4}$ grain of cocaine and 1 grain of caffeine.

Cocadrenine Suppositories. (115)

Each suppository is stated to contain 16 minims of a 1% solution of adrenalin borate and $\frac{1}{16}$ grain of cocaine hydrochlorid. They are used for hemorrhoids.

Coca-Glycerite Suppositories. (83)

These are stated to contain cocaine muriate, boracic acid, sodium sulfate, hamamelis virg., hydrastis canad., gallic acid, eucalyptol and glycerin.

Cocaine Carbolate (or Phenate).

This is a viscid, yellowish mass, soluble in alcohol but insoluble in water. It is a local anesthetic, analgesic and anticephalalgic, useful in dental operations, rheumatic pains, conjunctival, nasal, gastric and other catarrhs. Used in 1 to 3% solution in 30% alcohol, 5% powder, or pure.

Dose: $1/12$ to $1/8$ gr. once or twice daily in capsules. In injections use in a 1:1250 solution in alcohol.

Cocaine Formate.

This is in white silky needles, soluble in 41 parts of water.

Cocapyrin.

This is a mixture of 1 part of cocaine with 100 parts of antipyrin. It appears in the market in the form of 3-grain tablets which are intended for throat affections.

Coccia Pills. (182a)

Each pill is stated to contain
 Aloes, purifiedgr. $1\frac{1}{4}$
 Scammony resingr. 1
 Colocynth, powdergr. $\frac{1}{3}$
 Potassium sulfategr. $\frac{1}{8}$
 Oil of clove.....m. $\frac{1}{8}$

Cock's Anti-Phymin.

See Anti-Phymin.

Cocaine.

See Burnett's Cocaine.

Coddington's Asthma Powder.

A similar preparation may be made as follows (N. I.):

Potassium nitrateav.oz. 1
 Anise, seedav.oz. 1
 Stramonium leavesav.oz. 1
 Lobelia leavesav.oz. 1

Codeine Cough Sedative. 159

Each fluidounce is stated to represent
 Codeine phosphategr. 1
 Ext. cannabis indica.....gr. $\frac{1}{2}$
 White pine bark.....gr. 32
 Wild cherry bark.....gr. 32
 Yerba santagr. 16
 Balm of gilead buds.....gr. 4
 Chloroformm. 2
 Glycerinfl.dr. 2

Codliver Glycerine. (47)

This is described as "a hydrated glycerized morrhaine," "a concentrated soluble morrhaine extract," "four times the medicinal strength of cod liver oil."

Coe's Dyspepsia Cure.

Rhubarb, powderdr. 2
 Sodium bicarbonatedr. 6
 Fluid extract of gentian.....fl.dr. 3
 Peppermint waterfl.oz. $7\frac{1}{2}$

—Nelson, from N. I.

Coirre's Solution.

Sodium phosphategr. 343
 Calcium chloridsufficient
 Hydrochloric acid ..10%, fl.dr. 6
 Water, to make.....fl.oz. 16

Dissolve the sodium phosphate in 24 fluidounces of water and to this solution add either 183 grains of anhydrous or

365 grains of hydrous calcium chlorid. Collect the precipitate, wash it with water and dissolve it in the acid and enough water to make 16 fluidounces. Each tablespoonful contains 4 grains of acid calcium phosphate.—H.

Colalin. (53)

This is described by the manufacturers as "the amorphous active principle of bile." It is put up only in tablets, of which 1 or 2 are taken at a dose 3 or 4 times daily. It is used as a hepatic stimulant and for gall stones.

Colalin Laxative.

Each tablet is stated to contain colalin, $\frac{1}{4}$ grain, extract of cascara, 2 grains, and podophyllin, $1\frac{1}{6}$ grain.

Colchicine Salicylate Comp. Tablets.

(116)

These are stated to be composed of "thermol" and colchicine with pure natural salicylic acid.

Colchi-Sal. (Colchicine Salicylate Capsules, Trochet.)

This is sold in capsules, each one of which contains $\frac{1}{4}$ milligramme of colchicine dissolved in 20 centigrammes of methyl salicylate (oil of wintergreen). It is also stated to contain "1/500 grain of the active principle cannabis indica."

Coley's Mixture. (159)

This is a preparation containing erysipelas and prodigious toxins prepared according to the formula of Dr. Coley of the New York Cancer Hospital. It is used for the treatment of inoperable malignant growths, particularly sarcomata. It is injected in or near the tumor, beginning with $\frac{1}{2}$ to 1 minim and increasing gradually. Within 3 weeks it may be told if improvement may be expected from the treatment. Dr. Coley and others have reported a number of cures.

Collaform.

This is stated to be a formaldehyde-gelatin, intended as a vulnerary.

Collargol. (Soluble or Colloidal Silver—Argentum-Crede.)

This is a water-soluble, allotropic form of metallic silver, said to contain

85 to 87% of metallic silver and a small percentage of albumin with products of its oxidation. It occurs in small, hard, brittle, bluish-black, scale-like pieces, soluble in 20 parts of distilled water, producing a dark, olive-brown solution which remains stable for months. No separate silver particles can be distinguished in the solution even when magnified to the highest degree under the microscope, and it has all the characteristics of a solution. The addition of albumin to collargol prevents or delays its precipitation by acids and salts. A sufficient amount of albumin to prevent its precipitation under ordinary conditions is therefore added to collargol during its manufacture. Hence, collargol, even when dissolved in well or spring water containing salts, undergoes no change, and it remains unaffected by boiling, whereas colloidal silver containing no albumin precipitates on being boiled. A solution of collargol does not respond directly to the tests for silver; it should not be exposed to light or air; it is incompatible with the usual silver reagents.

Collargol is a general antiseptic and germicide which can be used externally or internally; it can be introduced into the system without causing either local reaction or general poisonous effects. In most cases it is best employed locally in the form of a 15% ointment, 30 to 60 grains being thoroughly rubbed into the skin. It is also used in 2 to 5% aqueous solutions for intravenous injections (in septicemia and pyemia), $\frac{1}{2}$ to 1% glycerin solutions for parenchymatous injections; also in 1/50 to 1% solutions for washes, in 5% dusting powder, in bougies containing 3 grains, and in vaginal suppositories containing $\frac{3}{4}$ grain. Internally a solution of 1:500 to 1:100 is given freely in teaspoonful doses; it is also given in pills or tablets containing $\frac{1}{2}$ to 1 grain.

To prepare a solution of collargol, put the latter into a perfectly clean, amber-

colored bottle, add the required amount of distilled water, and allow to stand until the collargol has softened, then shake vigorously until complete solution is effected. The solution should have a clear, brown color; if gray and turbid it is decomposed.

Collargol Ointment. (Unguentum Crede.)

This contains 15% of collargol. It is prepared by incorporating 15 parts of collargol with 5 parts of water, 10 parts of white wax and 70 parts of benzoinated lard, observing care that the soluble silver shall not be transformed into ordinary metallic silver, which it is prone to do unless great care be exercised.

The natural color of this ointment is dark bluish-gray. The addition of water may change the color to a brownish shade, which does not, however, impair its efficiency. The ointment is good as long as it colors the skin black.

This ointment is used for inunction, from 30 to 60 grains being rubbed into the skin for 15 to 30 minutes. For children about one-half as much should be used.

Collas' Capsules of Iron.

According to Hager, these contain iron reduced by means of electricity instead of iron reduced by hydrogen.

Collaurin. (Colloidal Gold.)

This is used in syphilis, cancer and scrofulous conditions in doses of $\frac{1}{2}$ to 1 grain.

Collins' Disinfecting Powder.

Chlorinated lime, dry.....	parts 2
Burnt alum	part 1
	—N. I.

Colorless Hydrastis. (131)

This is described as a permanent solution of the white alkaloid of hydrastis. The menstruum is said to be neutral and non-irritating.

Colsaloids. (187)

These are described as containing 1/250 grain of colchicine in 3 minims of methyl salicylate.

Colsathyl. (84)

This is described as a 5-minim capsule containing colchicine (1/160 gr.), phenol and methyl salicylates. It is recommended for rheumatism, gout, sciatica, etc.

Col-Solules. (89)

These are soft capsules containing 1/250 gr. of colchicine and 3 m. of methyl salicylate.

Col-Solules with Salol contain in addition 2 gr. of salol.

Compound Alum Powder. (184)

A mixture of dried alum, carbolic acid and camphor.

Compound Lithia Tablets. (160)

Each tablet is stated to contain lithium carbonate, sodium bicarbonate, potassium bicarbonate and magnesium silicate in proportion to yield about 6 grains of lithium citrate, 6 grains of potassium citrate, 3 grains of sodium citrate and 1 grain of magnesium silicate.

Compound White Pine Pectoral. (198)

Each fluidounce is stated to contain 30 grains each of white pine and wild cherry, 4 grains each of balm of gilead buds and spikenard, 3½ grains of blood root, 2 grains of sassafras bark, 4 minims of chloroform and 3/16 grain of morphine acetate.

Condy's Fluid Disinfectant.

This is an English proprietary preparation used as a disinfectant, said to contain manganate and permanganates of the alkalis and other salts, the nature of which does not appear to have been accurately determined. A solution of potassium permanganate (1%) official in the British Pharmacopoeia is intended to replace it.

Coniine Hydrobromid. (Conicine or Cicutine Hydrobromid.)

This is the salt of an alkaloid derived from Conium maculatum. It is in white prisms or in powder, soluble in 2 parts of water, 2 of alcohol, also soluble in ether and chloroform. It is used as an antispasmodic and antineuralgic in

tetanus, sciatica, etc. It has recently been lauded in whooping-cough. The dose for children is 1/600 to 1/40 grain 2 to 4 times daily, for adults 1/30 to 1/15 grain 3 to 5 times daily. Hypodermically in tetanus as much as 1/20 to 1/6 grain have been injected. Antidotes are first, emetics to evacuate the stomach, then tannin or an astringent tincture or fluid extract, and finally atropine, strychnine, picrotoxin and stimulants as systemic antidotes.

Conklin's Salve.

Resin	av.oz. 12
Yellow wax	av.oz. 1
Mutton suet	av.oz. 1

—Contributed to D. C.

Controdolin.

This is described as a "combination of salicylic and phenylic acids with acetamide." It is recommended as an analgesic and antipyretic in doses of 5 to 10 grains.

Convallamarin.

This is a glucoside from Convallaria majalis. It is a yellowish powder, soluble in water and alcohol, insoluble in chloroform, almost insoluble in ether.

It is a powerful noncumulative heart tonic, like digitalin, and is also diuretic.

Dose: ¾ to 1 grain every 1 or 2 hours. Maximum dose: Single, 1 grain; daily, 5 grains.

Convallarin.

This is not to be confounded with convallamarin, but both are derived from the same plant. It is a yellowish-white powder, soluble in alcohol, but insoluble in water. It is a purgative, without cardiac action.

Cook's Electro-Magnetic Liniment.

Alcohol	fl.oz. 64
Oil of amber	fl.oz. 4
Camphor	av.oz. 4
Castile soap, fine	av.oz. 1
Ox gall, fresh	fl.oz. 2
Ammonia water	fl.oz. 6

—Kilner.

Corassa Compound.

The following formula has been given by A. B. Lyons as the result of an analysis:

Gentian	per cent	15
Licorice root	per cent	15
Sugar	per cent	50
Sodium bicarbonate	per cent	17½
Cochineal	per cent	2½

Cordial Analptine. (167)

Each tablespoonful contains sodium iodid, 1/10 grain, lithium salicylate, 2 grains, potassium acetate, 5 grains, extract of black cohosh, "3 minims," and extract of cascara sagrada, "3 minims." It is used for rheumatic affections.

Cordial Exalginique. (121)

This is stated to contain 2½ grains of exalgine in each teaspoonful.

Cordial Pas-Carnata. (131)

This is stated to contain all the active medicinal constituents of *Passiflora incarnata* in concentrated form.

Cornutine Citrate.

This is the salt of an alkaloidal product, which according to Kobert, is the true active principle of ergot. It is a brownish-black mass or powder, very hygroscopic, soluble in alcohol, sparingly and incompletely soluble in water.

It is used for the same purposes as ergot, to promote labor pains, as a hemostatic, etc. As a hemostatic it is used in doses of 1/8 grain 3 times daily. It has also been advocated for spermatorrhea in doses of 1/20 grain twice daily.

Cornutol. (141)

This is described as a concentrated, aseptic preparation of ergot of rye, especially prepared for hypodermic and general use. It is 2½ times as active as fluid extract of ergot, U. S. P. It is furnished in 1-ounce vials and in hermetically sealed bulbs each containing ½ dram.

Corpula. (119)

According to the manufacturers this "does not contain a drug, or drugs, in the strict sense of the term. In a broad sense, the phosphates of grain, the diastase of malt, the maltose of malted grain, lactose from milk, and the small amount of flavoring principles present,

might be said to constitute a mixture of drugs, but this is not true in any specific sense, as none of these have a specific therapeutic action other than that of concentrated foods, or aids to digestion of other amylaceous foods."

Corrective Mixture. (160)

This is described as a very desirable neutralizing cordial indicated in acid stomach, flatulency, children's diarrhea, and the constipation of infants. It is stated to contain magnesium hydroxid combined with "aromatic rhubarb."

Cortexalin. (50)

This is stated to contain gentian, columbo, cinchona rubra, damiana, nuxvomica, and Burgundy wine.

Coryfin. (Ethylglycolic Ester of Menthol.)

This is a limpid, colorless, oily substance of faint odor of menthol. It is soluble in alcohol, ether and chloroform. It is applied locally for catarrh and coryza. When applied to the forehead it causes the cooling feeling of menthol which lasts for an hour. In cases of cold in the head the nasal mucous membrane may be painted with corypin and marked relief in breathing is said to be obtained.

Cosaprin. (Sodium Acetylsulfanilate.)

This is a white, crystalline substance freely soluble in water, less soluble in alcohol. It has been introduced as a substitute for acetanilid. The dose is 10 to 30 grains.

Cotarnine Hydrochlorid.

See Stypticin.

Cotarnine Phthalate.

See Styptol.

Coudray's Eau de Quinine.

According to Hisserich in the Berlin Pharm. Ztg., this has the following composition:

Tincture of cinchona.....	fl.oz.	1
Tincture of cantharides....	fl.dr.	4
Spirit of soap.....	fl.oz.	2
Cologne water	fl.oz.	5
Alcohol	fl.oz.	5

Peru balsam	gr. 192
Oil of bergamot.....	f.dr. 1½
Oil of sweet orange.....	f.dr. 1½
Oil of rose geranium....	drops 30
Brandy, to make.....	f.oz. 40
Cochineal.....	enough to color

Cough Tablets. (108)

Each is stated to contain ammonium chlorid, cubeb, wild cherry, terpin hydrate and licorice.

Cram's Fluid Lightning.

Contributed by I. L. Fulton to W. D.:

Oil of mustard, volatile....	f.dr. 1
Oil of cajeput.....	f.dr. 1
Oil of clove.....	f.dr. 1
Oil of sassafras.....	f.dr. 1
Ether	f.dr. 4
Tincture of opium.....	f.dr. 6
Alcohol	f.oz. 10

By some it is supposed that this preparation is merely a solution of volatile oil of mustard in alcohol.

Crealbin.

This is a compound of creolin and albumin containing 50% of the former. It is a brown powder used as an intestinal astringent and antiseptic in doses of 5 to 15 grains.

Cream of Cod Liver Oil. (140)

This preparation is stated to contain 67% of pure cod liver oil, predigested with pancreatin, and gum arabic to impart consistency.

Cremoline. (207)

This is described as an emulsion of animal and vegetable fats, this being the formula:

Cream	50%
Cod liver oil	25%
Olive oil	3%
Hennessey brandy.....	6%
Syrups and aromatics.....	16%

Creoferrate Elixir. (179)

This preparation is stated to contain peptonates of iron and manganese and beechwood creosote.

Creolin.

There are two varieties of this article, known as Pearson's and Artman's. Both are made from crude cresol, the former being a resin soap emulsion, the latter is

obtained by treating the crude cresol with sulfuric acid.—Coblentz.

Creosal.

See Tanosal.

Creosin.

This is a clear yellow liquid, of not unpleasant taste, soluble in water, miscible with wine, soup, milk, etc. It is stated to contain iodine, creosote, calcium hypophosphite, and peru balsam. It is an Italian product, used in phthisis.

Creosotal. (Creosote Carbonate.)

This is prepared by passing a current of carbonyl chlorid into a solution of creosote in sodium hydroxid and purifying the oily product by washing with weak soda solution and then with water. It is a yellowish, thick, honey-like, perfectly clear and transparent liquid, containing 92% of creosote. It is odorless and has a bland oily taste. It is insoluble in water but soluble in alcohol, ether, chloroform and fixed oils. It is incompatible with alkalies.

It has the same medicinal action as creosote but is claimed to be non-toxic and non-irritant. It is recommended as a substitute for creosote for internal exhibition in tuberculosis, pneumonia, and as an intestinal antiseptic. The dose for children is 5 to 30 grains, for adults, 15 to 60 grains, in milk, coffee, wine, cod liver oil, or emulsion. Externally it may be applied undiluted.

Creosote Capsules, Sommerbrodt's.

These are prepared according to Prof. Sommerbrodt's formula, each capsule containing 2 minims of creosote "with suitable cod liver oil vehicle."

Creosote Carbonate.

See Creosotal.

Creosote Iodid.

See Creosotide.

Creosote Mixture Comp.

See Mixture Creosote Compound.

Creosote Oleate.

See Oleocreosote.

Creosote Phosphate.

See Phosote.

Creosote Phosphite.

See Phosphotal.

Creosote Salicylate.

See Salocrool.

Creosote Tannate.

See Tanosal.

Creosote Valerianate.

See Eosote.

Creosotide. (Creosote Iodid.) (143)

This is stated to be a combination of iodine and creosote, containing about 25% of iodine. It forms a brownish powder of weak creosote odor and taste, and insoluble in water. It is recommended for tuberculosis, scrofula, obstinate rheumatism, some cases of asthma, etc. It is put up in $\frac{1}{4}$ -gr. and $\frac{1}{2}$ -gr. tablets, also in combination tablets with pepsin, bismuth or strychnine.

Creosotonic (Scott). (58)

Each fluidram is said to contain

Guaiacol	{ represented by	
Creosote	{ soluble sulfonates,	
	eachm. 1
Quinine hypophosphitegr.	1/36
Strychnine hypophosphitegr.	1/256
Sodium hypophosphitegr.	1/5
Potassium hypophosphitegr.	1/5
Iron hypophosphitegr.	1/5
Calcium hypophosphitegr.	1/8
Manganese hypophosphitegr.	1/8
Oil of turpentinem.	1 3/4
Iodingr.	1/16
Phenolgr.	1/4

Combined with aromatic oils in the form of a perfect emulsion and using elixir of lactated pepsin as a vehicle.

Creo-Terpin Comp. (211)

Each fluidounce is stated to contain

Creosotem.	4
Terpin hydrategr.	4
Calcium glycerophosphategr.	8
Sodium glycerophosphategr.	4
Heroin hydrochloridgr.	1/6

It also contains 26% of alcohol.

This is used for colds, phthisis, asthma, catarrh, pneumonia, etc., in doses of from 1 to 2 teaspoonfuls every 1 to 3 hours.

Cresalol. (Cresol Salicylate—Cresol Salol.)

This is a whitish powder, insoluble in

water, but soluble in alcohol and ether, used as an intestinal antiseptic and as a dusting powder.

Dose: 5 to 30 grains daily.

There are three cresalols, ortho, meta and para-cresol salicylates, the para compound being generally employed.

Cresobene Capsules. (59)

Each capsule is stated to contain

Beechwood creosotegr.	2
Terebenegr.	1
Eucalyptolgr.	1/2
Quassingr.	1/65

They are recommended for phthisis, bronchitis, asthma, etc.

Cresol Iodid. (Traumatol.)

This is a compound of cresylic acid and iodine. It is a yellowish, very bulky powder, containing 54% of iodine. It is insoluble in water, soluble in alcohol, ether, chloroform and fixed oils. It adheres to the hands, instruments, etc., like resin. It is used as an antiseptic in place of iodoform.

Crethol. (155)

This is described as an alkaline saponaceous cresylic acid compound, containing orthocresol. It is a clear brown liquid of a cresol odor.

Croton-Chloral Hydrate.

See Butyl-Chloral Hydrate.

Crurin. (Quinoline-Bismuth Sulfocyanid.)

This is a reddish-yellow powder of a slight quinoline odor, insoluble in alcohol and water. It is marketed as a 50% dusting powder mixed with starch. It is used as a dusting powder for ulcers of the leg, also for gonorrhea in mixtures containing $\frac{1}{2}\%$ with water and a little glycerin.

Gryogenine.

Chemically this is metabenzaminosemicarbazide, a white, odorless powder, soluble in 40 parts of water, more soluble in alcohol, ether and chloroform. It has been recommended as an antipyretic in phthisis and typhoid fever in doses of 5 to 15 grains.

Cryostase.

This is said to consist of equal parts carbolic acid, camphor and saponin, with traces of oil of turpentine. It becomes solid when heated, and liquid below 0° C.

It has been recommended as an antiseptic.

Crysol.

This is an antiseptic preparation (not proprietary) made according to this formula:

Crude carbolic acid.....	parts 5
Resin soap	part 1
Liquid soda soap.....	parts 4
Liquid soda soap is made from:	
Cottonseed oil.....	av.oz. 10
Sodium hydrate	av.oz. 1½
Alcohol	fl.oz. 8
Water	fl.oz. 12

Crystallöse.

This is a name given to a very soluble sodium salt of saccharin. It is stated to be 400 times sweeter than sugar.

Cupricitrol. (Copper Citrate.)

This is a greenish powder, very slightly soluble in water. It is used in 5 to 20% dusting powders and ointments in diseases of the eye, particularly trachoma.

Cuprohemol. (Cuprated Hemol.) (130)

This is hemol with 2% of copper in organic combination. It is prepared by precipitating a solution of blood with a dilute neutral solution of a copper salt at a temperature not materially exceeding 0° C. It is a dark-brown insoluble powder, said to be useful in tuberculosis, scrofula, anemia, chlorosis, etc. The dose is 1½ to 3 grains 3 times daily. The maximum dose is 8 grains.

Cuprol. (Copper Nucleinate or Nucleide.) (159)

This is stated to be a chemical compound of copper and nucleinic acid containing about 6% of the former. It is a green powder, soluble in water. This has the advantage over other copper salts in that it penetrates tissues more deeply and is less irritating to inflamed

surfaces. Its solutions do not coagulate albumin and are not precipitated by alkalies. It is employed pure or in 10% solutions as an antiseptic and astringent, chiefly in eye diseases.

Curarine. (Tubocurarine.)

This is the alkaloidal principle of curare or woorari, the South American arrow poison. It differs from all other crystallizable alkaloids, with one exception of containing no oxygen. It is in colorless crystals which are extremely deliquescent, of extreme and persistent bitterness; it is soluble in water and alcohol. It has been recommended in tetanus, in doses of 1/60 to 1/12 grain used hypodermically. Antidotes are atropine, strychnine, artificial respiration and stimulants.

Curaril.

This is represented to be a stable, very active liquid preparation of curare, and is used for tetanus. It is used hypodermically in doses of 2.4 cc. If after one-half hour, no effect is observed, the dose is repeated every two or three hours, each dose being increased by 0.2 cc., until relief is obtained.

Curwin's Hog Powder.

According to Caldwell, this consists of salt, sulfur, copperas and charcoal. The sulfur estimated 4.33%, the iron sulfate 4.55%, the sodium chlorid 77.74%, and the carbon 3.53%.—Era, 1889.

Cutal. (Aluminum Borotannate.)

This is a light-brown powder, insoluble in water excepting on the addition of tartaric acid. It contains 76% of tannin, 13.23% of aluminum and 10.71% of boric acid. It is used externally as an astringent and antiseptic in skin diseases.

With tartaric acid it forms soluble cutal or aluminum borotannicotartrate, which is used in solution in some skin diseases, in gonorrhea, etc.

Cypri-Bromides. (83)

Each fluidounce is stated to represent 60 grains each of cypripedium and po-

tassium bromid, 15 grains each of sodium and ammonium bromids, 15 minims of deodorized tincture of opium, 2 grains of "brom. caffeine," and aromatics.

Cypriol. (204)

This is put up in capsules, each one containing 20 centigrams. It is described as "a 1% solution of nascent biniodide in an aseptic oil." Elsewhere it is stated that a capsule is equivalent to $1/32$ grain of mercuric iodid.

Cystopurin.

This is a double salt of one molecule of hexamethylene-tetramine and two molecules of sodium acetate. It is a white powder, very soluble in water but almost insoluble in alcohol.

Daffy's Elixir. (Tincture of Senna Compound.

Various formulas have been given for this, among which is the following:

Alexandria senna, cut.....dr.	8
Jalap, finely powdered.....dr.	4
Coriander	2
Raisins, deprived of seeds.....av.oz.	$1\frac{1}{2}$
Diluted alcohol	fl.oz. 16

Macerate for 7 days, shaking occasionally, and filter.

Dalby's Carminative Elixir.

This is an old English patent which is said to be a mixture of

Tincture of asafetida.....g.	10
Tincture of opium.....g.	20
Tincture of castor.....g.	30
Oil of peppermint.....g.	10
Oil of caraway.....g.	5
Alcohol	100
Simple syrup	150
Calcined magnesia	5

—H.

In a somewhat modified form, this is now recognized by the N. F. under the name Carminative Mixture.

Dallmann's Tamarinden Essenz.

The following is the formula of the Muenchener Apotheker Verein for tamarind essence:

Tamarinds (not the extracted pulp)	av.oz. 10
Senna leaves, cut.....	av.oz. 1
Magnesia, calcined	gr. 18
Simple syrup	fl.dr. 6

Syrup of orange.....	fl.dr. 6
Syrup of cinnamon.....	fl.dr. 6
Alcohol	fl.oz. 1
Distilled water,	
Magnesium carbonate,	
each	sufficient

Upon the tamarinds pour 50 fluid-ounces of hot distilled water, mix thoroughly, macerate for several hours, and strain without pressure through a hair sieve. Evaporate the product until it weighs 20 av. ounces, and neutralize 15 av. ounces of this with magnesium carbonate.

Also macerate the senna and calcined magnesia with 10 fluidounces of distilled water (cold)* for 24 hours, strain without pressure, add the tamarind extractive, heat the whole to boiling, strain through flannel, and evaporate the liquid to a weight of 16 av. ounces. To this when cool add the syrups and the alcohol previously mixed with 3 fluidrams of water, set aside for some time, and filter.

Damholid.

This is a preparation of hemoglobin intended for the treatment of anemia of cattle. It comes in three forms. Damholid liquid containing 40% of hemoglobin; damholid I, a dark brown, granular, odorless powder, readily soluble in 8 parts of cold water; and damholid II, a fine brownish-red powder, also soluble in 8 parts of water.

Daniel's Conct. Tinct. Passiflora. (56)

This is described as a concentrated tincture prepared from the green leaves, fruit and root of the may-pop (*Passiflora incarnata*). It is used in nervous irritability, especially in insomnia.

Daniel's Pineapple Phosphates.

The ingredients are stated to be soda, lime, iron, phosphorus, extract of wild cherry, and calisaya bark. It is recommended for chlorosis in doses of a tablespoonful 3 times a day.

Darby's Prophylactic Fluid.

Potassium permanganate ...	gr. 5
Potassium sulfate	gr. 150
Potassium carbonate	av.oz. $1\frac{3}{4}$

Potassium chloridgr. 110
 Water, to make.....fl.oz. 16
 —Fenner.

Darpin. (166)

This is the name given to "dark pinus canadensis."

Darwin's Liniment.

Oil of wormwood.....fl.oz. 1
 Oil of thyme (red).....fl.oz. 1
 Stronger water of ammonia.fl.oz. 1
 Wood alcoholfl.oz. 13

Davy's Urinal Cakes. (Disinfecting Solid.)

A mixture of resin with sulfates of copper, iron, zinc and sodium and some alum. These salts are probably powdered and mixed with the resin by fusion.—O. J. Bierbach, in Oregon Phar. Asso.

Day's Kidney Pad.

Black cohoshav.oz. 1
 Gum benzoinav.oz. 1
 Gum guaiacav.oz. 1
 Juniper berriesav.oz. 1
 Queen-of-the-meadowav.oz. 1
 Digitalisav.oz. 2
 Oil of juniper.....fl.oz. 1½

Reduce the solids to moderately fine powder and incorporate. Make into an oblong pad to wear over the kidneys.

Dehaut's Purgative Pills.

Aloesgr. 100
 Jalap rootgr. 100
 Gambogegr. 50
 Extract of dandelion.....sufficient
 Make into pills each weighing 2 grains.
 —H.

Delabarre's Sirop de Dentition.

This is similar to a mixture of
 Tincture of saffron.....m. 10
 Tincture of ipecac.....m. 10
 Syrup of rhubarb.....fl.oz. 1
 Syrup of licorice.....fl.oz. 1
 According to some, it also contains vanilla.—H.

Dental Surprise.

This contains about 1½% of cocaine hydrochlorid and some carbolic acid.—Sadtlger.

Dentalone. (159)

This is the name given to a saturated solution of chloretone in a mixture of oils of clove, cassia and wintergreen.

These oils are stated to take up over 30% of their weight of chloretone, hence the solution is a very active local anesthetic—one that is especially suitable for application to exposed nerves in decaying teeth. Dentalone is also used for the treatment of sensitive dentine, painful and inflamed tooth sockets, etc., and as a solvent for arsenic paste.

Derby Liniment.

Linseed oilfl.oz. 16
 Ammonia waterfl.dr. 4
 Tincture of capsicum.....fl.dr. 1
 Oil of origanum.....fl.dr. 1
 —Kilner.

Deret's Bi-Iodized Elixir.

This is stated to be composed of
 Sweet wineliter 1
 Mercury iodo-tannateg. 9.5

The quantity of mercury contained in one tablespoonful is stated to be equivalent to ½ centigram (1/12 grain) of "bi-iodide."

Dericin.

See Floricin.

Derival.

This is said to be a mixture of spirit of mustard, ammonia and oil of turpentine, recommended as an application for rheumatism.

Dermamol Ointment. (143)

Among the ingredients mentioned are carbolic acid, resorcin, tar, bismuth subcarbonate, and zinc oxid.

Dermasapol.

This is a medicinal soap basis, consisting of a mixture of oil, fat, lanolin and paraffin, together with alkalies in sufficient quantities for complete saponification. It is used in combination with various drugs in diseases of the skin, and as a fatty vehicle for the administration of remedies through the cutaneous surface.

Dermatin.

This is a new skin perfecting preparation consisting of from 5 to 7 parts salicylic acid, 7 to 15 parts starch, 25 to 50 parts talcum, 30 to 60 parts silicic acid, and 3 to 9 parts of kaolin.

Dermatol. (Bismuth Subgallate.)

An odorless saffron-yellow powder, containing 55% of bismuth oxid. It is non-irritant and non-toxic externally; insoluble in water, alcohol, ether or chloroform; an antiseptic in wounds, burns, eczemas, ulcers, etc. It is used as a substitute for bismuth subnitrate internally in gastro-intestinal affections; externally it is used like iodoform.

Dose: 30 grs. daily.

Dermogen.

This is a pale yellowish, odorless insoluble powder stated to contain 40 to 60% of zinc peroxid; it is stated to give off oxygen on contact with wounds and thus act as a stimulant and disinfectant.

Deshler's Salve.

According to N. I., this is similar to Compound Resin Cerate, U. S. P., 1870, which is prepared as follows:

Resin	av.oz. 4
Suet	av.oz. 4
Yellow wax	av.oz. 4
Gum turpentine	av.oz. 2
Linseed oil	fl.oz. 2¼

Melt the wax, suet and resin, add the turpentine and then the oil, strain and stir until cool.

Detergal. (182a.)

This is described by the manufacturers as a non-poisonous liquid antiseptic soap.

Dethan's Pastilles of Potassium Chlorate.

According to Hager, they are made as follows:

Potassium chlorate	gr. 150
Carmine	gr. 1
Tragacanth	gr. 15
Tincture of tolu.....	m. 15
Sugar	av.oz. 3
Orange-flower water.....	sufficient

Mix and divide into 100 oval lozenges.

Dewee's Tincture of Guaiac.

Resin of guaiac.....	gr. 960
Potassium carbonate	gr. 45
Pimento, moderately fine powder	gr. 240
Pumice powder	av.oz. 1
Alcohol	fl.oz. 7
Water	fl.oz. 7
Diluted alcohol, to make...	fl.oz. 16

Triturate the resin and potassium carbonate with the pimento and pumice, and afterward gradually add the alcohol. Next add the water, triturate the mixture thoroughly, filter, and pass enough diluted alcohol through the filter to make 16 fluidounces.

Dextroform.

This is described as a condensation of dextrin and formaldehyde. It is white, almost inodorous and tasteless, soluble in water and glycerin, insoluble in alcohol. It is used as an antiseptic application to wounds and as an injection for gonorrhea in 2½ to 5% solutions.

Dextro-Quinine.

This is said to consist of quinidine with other alkaloids after the extraction of quinine from red cinchona.—Fenner's Form.

Dextro-Saccharin.

Saccharin	part 1
Glucose, crystal.....	parts 1000 to 2000

—B. Fischer.

Diabetin (Levulose—Fruit Sugar—Fructose.) (178)

This is a pure, crystallized levulose, free from dextrose (ordinary glucose). It is colorless, odorless, slightly hygroscopic, of a sweet taste like cane sugar, readily soluble in water and diluted alcohol. It is recommended for the nutrition and for sweetening the food and drink of diabetics, in pulmonary tuberculosis, infantile nutrition, and marasmus. It is given in diabetes in daily quantities of 1 to 2 ounces, in grave forms of the disease the amount is reduced to from 3 to 6 drams.

Diacetyl-Morphine.

See Heroin.

Diaphtherin. (Oxyquinaseptol.)

This is a yellow crystalline powder, soluble in water and diluted alcohol. It is used as a surgical antiseptic.

Diastase.

For the various brands of diastase mentioned in this book, see Bana-Diastase, Diastin, Taka-Diastase, and Vera Diastase.

Diastin.

This is a brand name for vegetable diastase.

Diathesin.

This is a name given to saligenin prepared synthetically instead of by decomposition of salicin. It is fine, white leaflets of a slightly bitter taste, soluble in 15 parts of cold water, freely soluble in hot water or alcohol. It is employed in place of salicylates in the treatment of rheumatism, neuralgia, tonsillitis, gout, etc. It is said to be more palatable and readily administered than sodium salicylate and not to excite the disgust caused by the latter, nor to cause ringing in the ears. The dose is $7\frac{1}{2}$ to 15 grains 3 or 4 times a day.

Diazyme Essence. (70)

This is a liquid which is stated to contain the amylolytic enzyme of the pancreas, devoid of trypsin and lipase in a menstruum containing $18\frac{1}{2}\%$ of alcohol by volume. It is capable of digesting starch and is said to be useful to compensate for deficient pancreatic secretion.

Diazyme Glycerole.

This is a liquid stated to contain the myalolytic enzyme of the pancreas, devoid of trypsin and lipase, in a menstruum composed of about 60% of glycerin by volume.

Dick's Wonder Salve.

According to Hager, this is of the same composition as camphorated mother plaster.

Dickson's Improved Anæsthetic.

This contains 4% of cocaine hydrochlorid with some carbolic acid and chloral hydrate.—Sadler.

Didymium Salicylate.

See Dymal.

Diethylbarbituric Acid.

This is the chemical name for veronal, which see.

Difuordiphenyl.

This is a white crystalline powder of pleasant aromatic odor, insoluble in wa-

ter, soluble in alcohol, ether, chloroform and oils. It is used as an antiseptic dusting powder mixed with 9 parts of talcum, or in 10% ointment with lanolin as a dressing for burns. It is used internally in bronchial affections in doses of $1/16$ to $1/4$ grain. In the form of a 5% ointment it is used under the name Antitussin (which see) for whooping-cough.

Digalen.

This is put up only in packages of $1/2$ ounce each. It is a clear brownish liquid stated to contain digitoxin in the soluble form made by Cloetta's process. Each cc. is stated to contain 0.3 mg. of soluble digitoxin.

Digestiva Pills. (212)

These are stated to contain each
Concentrat. pepsin.....gr. 1
Nux vomica.....gr. $1/4$
Sulfurgr. $1/8$
Gingerinegr. $1/16$

They are recommended for indigestion.

Digestive Hypophosphites. (160)

This is stated to be composed of the hypophosphates of calcium, potassium, iron and manganese with 1 grain of quinine sulfate and $1/16$ grain of strychnine sulfate dissolved in a fluid-ounce of glycerole of pepsin and pancreatin, the whole being flavored; no sugar is used.

Digestol. (10)

This is stated to be a mixture of bismuth subnitrate, pepsin, extract of ginger, salol, milk sugar and cinnamon water.

Digitalin Comp. Elixir.

See Elixir Digitalin Compound.

Digitalone. (159)

This is sterile, non-alcoholic, non-irritating, permanent preparation of digitalis, equivalent in strength to a 10% tincture of digitalis. It may be administered hypodermically as well as by mouth. It is preserved with 0.6% of chloretone and its subcutaneous injection is comparatively free from pain.

Digitoxin.

This is the most active glucoside from digitalis. It is a white crystalline powder, soluble in alcohol and chloroform, slightly soluble in ether, insoluble in water. It is a powerful heart tonic.

Dose: 1/250 to 1/125 grain 3 times daily. As an enema, give 1/80 grain 1 to 3 times daily. The maximum dose is 1/32 grain daily.

The so-called "soluble digitoxin" made by Prof. Cloetta's process is which is chemically and therapeutically identical with the other digitoxin but is fairly soluble in water.

Diiodoform. (Tetraiodoethylene.)

This is an antiseptic which may be regarded as the condensation product of 2 molecules of iodoform with the elimination of 1 molecule of hydriodic acid. It contains 96.7% of iodine (almost as much as iodoform), is said to therapeutically equal to the latter, and is almost odorless. It is in yellowish needles, insoluble in water, slightly soluble in alcohol and ether, but more soluble in chloroform and carbon disulfid.

Dionin. (Ethyl-Morphine Hydrochlorid.)

This is a white powder, odorless and only slightly bitter, soluble in 7 parts of water and 2 parts of alcohol. It is claimed that this compound acts like morphine without producing constipation, nausea or lassitude. It is recommended to relieve pain, especially in respiratory affections, as an antispasmodic in whooping cough, for insomnia, and externally in the treatment of corneal affections, conjunctivitis, iritis, etc. The dose is 1/4 to 1 grain. Externally it is applied in 10 to 20% solutions.

Diosmal.

This is an extract of buchu prepared by a special process, viz.: Exhausting the buchu leaves with boiling ligroin and then with boiling alcohol.

Dioviurnia. (64)

This is stated to contain the fluid extracts of wild yam, star grass, black haw, cramp bark, squaw vine, helonias, blue colosh and scullcap. It also contains 18% of alcohol. It is a uterine tonic and antispasmodic.

Dioxogen. (152)

This is the trade name for the Oakland Chemical Co.'s brand of hydrogen peroxid.

Dipsomania Tablets. (17)

The tablet triturates consist of

Gold and sodium chlorid....gr.	1/8
Cocaine hydrochlorid.....gr.	1/6
Ammonium muriate.....gr.	1/16
Strychnine nitrate.....gr	1/50
Atropine sulfate.....gr.	1/200

The hypodermic tablets consist of

Gold and sodium chlorid....gr.	1/10
Strychnine nitrate.....gr.	1/40

The tablet triturates and hypodermic tablets are to be used together.

Diphthericide.

This is in pastilles containing thymol, sodium benzoate and saccharin. They are used as a prophylactic against diphtheria.

Diphtheritic Powder. (Pulvis Diphtheriticus.) (60)

This is stated to contain

Calcariae silicatæ.
Calcariae sulphuratæ.
Potassæ sulphuratæ.
Potassæ chloratæ.
Pulvis aromatic, q. s.

Diphthero Comp. Elixir.

See Elixir Diphthero Comp.

Dispnon Tablets.

Each tablet is stated to contain 0.25 g. of diuretin, 0.10 g. of agurin, and 0.10 g. of extract of quebracho. They are employed for asthma and shortness of breath. The dose is 2 tablets 3 times a day.

Diurazin. (116)

This is stated to be chemically theobromine acetylmethylenedisalicylate. It is said to contain 30% of theobromine and 55% of salicylic acid. It is recommended for dropsical conditions in doses of 6 grains every 2 hours.

Diuretic Oil Capsules.

These are recommended by Prof. Ko-
bert as a substitute for various diuretic
teas. They contain 0.1 g. of each of the
following: Juniper oil, lovage oil, an-
gelica oil, jaborandi oil, apiol, safol,
guaiaicol, terpinol, and borneol.

Diuretin. (Theobromine-Sodium Salicylate.)

This is a white, odorless powder of
a saline taste and containing 50% of
theobromine, and 38% of salicylic acid.
It is freely soluble in water but ex-
posure to the carbon dioxid of the air
renders it insoluble and hence it must
be preserved in glass-stoppered bottles.
It is incompatible with many other
chemicals and hence should be pre-
scribed by itself. It has the same medi-
cal properties as theobromine over
which it has the advantage of greater
solubility. The dose is 15 grains given
5 or 6 times daily.

Diuroi. (Elixir Serenoæ Comp.) (141)

Each fluidounce is stated to contain

Lithium benzoate.....	gr. 4
Potassium bicarbonate.....	gr 8
Buchu	gr. 8
Couch grass.....	gr. 16
Saw palmetto.....	gr. 16
Hydrangea	gr. 16
Corn silk.....	gr. 16
Pichi	gr. 16
Sandalwood	gr. 2
Henbane	gr. 1
Belladonna	gr. 1/2

This is described as an alkaline diure-
tic which exerts a soothing and tonic
influence upon the genitourinary tract
and relieves vesical and renal irritation.

Dixon's Pills.

Compound ext. colocynth....	gr. 240
Rhubarb	gr. 120
Tartar emetic.....	gr. 8
Syrup of buckthorn.....	sufficient
To make 120 pills.—Cooley.	

Doan's Backache Kidney Pills.

According to an analysis reported in
the British Medical Journal, the follow-
ing furnishes a similar product:

Oil of juniper.....	drop 1
Potassium nitrate.....	gr. 5
Hemlock pitch.....	gr. 10

Fenugreek	gr. 17
Wheat flour.....	gr. 4
Corn starch.....	gr. 2
Divide into 20 pills.	

Doan's Dinner Pills.

According to an analysis reported in
the British Medical Journal, these have
approximately the following composi-
tion:

Oil of peppermint.....	drops 1
Podophyllin	gr. 3.8
Aloin	gr. 6.9
Jalap resin	gr. 0.8
Capsicum	gr. 0.5
Licorice, powder.....	gr. 0.6
Extract of henbane.....	gr. 1.5
Acacia	gr. 1.5
Corn starch.....	gr. 0.5

Dodd's Kidney Pills.

According to an analysis reported in
the British Medical Journal, these were
found to consist of extract of cascarrilla,
jalap resin, soap, potassium nitrate, so-
dium bicarbonate, paraffin, turmeric and
wheat flour.

Dolomol. (165)

This is magnesium stearate, containing
small amounts of magnesium palmitate
and oleate. It is a white powder, in-
soluble in water, unctuous to the touch,
nearly odorless and tasteless. Its mag-
nesium content corresponds to nearly
7% MgO. Acting as a protective to the
skin it is recommended in cutaneous
affections as a dusting powder, alone or
mixed with various remedies. It is
marketed plain and mixed with acet-
anilid, boric acid, salicylic acid, alum,
iodoform, resorein, thymol, sulfur, tar,
etc.

Doloran Tablets.

These are used as an anesthetic in
teeth extraction 1/10 mg. of adrenalin.
10 mg. of cocaine and 2 mg. of sodium
chlorid in each capsule.

Dormiol. (Amylene Chloral.)

This is a combination of amylene hy-
drate and chloral hydrate. It is an oily,
colorless liquid of a camphoraceous
odor, insoluble in cold water but freely
miscible with alcohol, ether, chloroform
and oils. It is marketed in 50% solu-

tion and in capsules. It is used as a hypnotic in doses of 5 to 30 minims.
Dorsenia.

This is a dental anæsthetic containing about 1/5% of cocaine hydrochlorate with some carbolic acid, camphor, and probably alcohol.—Sadler.

Dow's White Liquid Physic.

This is made of the following:

Sodium sulfate.....av.oz.	4
Alum	gr. 30
Nitromuriatic acid.....fl.oz.	1
Distilled water.....fl.oz.	12

Driffeld Oils.

This is prepared by boiling olive oil with fresh wormwood, savin and arnica, and adding about 1/60 part of a mixture of oils of rosemary, thyme and juniper.—H.

Duboisine Sulfate.

This is a yellowish, hygroscopic powder soluble in water. It is used as a sedative and hypnotic, especially in mental diseases, also as a mydriatic like atropine, but is much stronger; it is used principally as a mydriatic in aqueous solution, each fluidounce to contain ½ to 2 grains of alkaloidal salt.

Dose: 1/160-1/64 gr. 2 to 3 times daily. Maximum dose: single, 1/32 gr.; daily, 1/16 gr. Antidotes: Pilocarpine, muscarine.

Duffy's Cathartic Elixir.

This contains, it is claimed, jalap, senna, buckthorn, anise, caraway, coriander and galangal.

Dulcin. (Sucrol.)

This is a sweetening agent similar to saccharin, being said to be 300 times sweeter than cane sugar. It is a white, odorless powder, soluble in 25 parts of alcohol, 50 of boiling water and 800 of cold water. It is used for the same purposes as saccharin.

Dunbar's Serum.

See Pollantin.

Duo-Peptonate. (Liquor Ferri et Mangani Peptonatus.) (142)

Also called Duothal.

Each tablespoonful is stated to contain approximately

Peptonate of iron.....gr.	1½
Peptonate of manganese.....gr.	¼

Duotal. (Guaiacol Carbonate.)

This is an odorless, crystalline powder, containing 91½% of guaiacol, is insoluble in water, slightly soluble in glycerin, alcohol and oils.

It is used as an intestinal antiseptic, and is given in phthisis.

Dose: 8 to 15 grains. It is preferred to guaiacol and creosote because it does not disturb the digestive functions.

Duothal.

This is another name for Duo-Peptonate, which see.

Duotonol. (178)

This is a mixture of equal parts of calcium and sodium glycerophosphates (or calcium tonol and sodium tonol—See Tonols). This is a white, granular powder, freely soluble in water. It is used as a nerve tonic in doses of 5 to 10 grains 3 times daily.

Dupuytren's Pills.

Each is made to contain

Guaiac, powder.....gr.	3
Opium, powder.....gr.	⅓
Corrosive sublimate.....gr.	1/10

Dupuytren's Hair Pomade.

Beef marrow.....av.oz.	3½
Peru balsam.....dr.	1
Oleobalsamic mixture.....m.	50
Tincture of cantharides.....m.	25
Oil of cinnamon.....m.	30
Oil of bergamot.....m.	15

—H.

Duran.

This is a combination of calcium carbonate and phosphate with egg-albumen, in the form of a white powder; it is also put up in chocolate-coated tablets. It is said to be useful in children's complaints, particularly rickets and similar ailments.

Dusal.

See Sal-Eliminant.

Dusart's Syrup.

A French proprietary preparation consisting essentially of syrup of lactophosphate of lime flavored with orange flower water.

Dyche's Compound Capsules of Guaiacol No. 1.

Each capsule contains 5 minims of guaiacol, 10 minims of cod-liver oil, and $\frac{1}{4}$ gr. of codeine.

Dyche's Compound Capsules of Guaiacol No. 2.

Each capsule contains 5 minims of guaiacol, 10 minims of cod liver oil and $\frac{1}{2}$ gr. of iodine.

Dyche's Compound Pills of Potassium Iodid.

Each pill contains 5 grains of potassium iodid and $\frac{1}{20}$ grain of red iodid of mercury.

Dymal. (Didymium Salicylate.)

This is a fine starch-like, reddish-white, odorless powder. It is a valuable drying antiseptic. It is applied in the form of powder or as a 10% ointment in various skin diseases, notably dry and weeping eczemas, impetigo, herpes, prurigo, etc.

Dynamyne. (118)

This is preparation which contains the alkaloids of tobacco. It is a green-colored hydroalcoholic liquid, which was used largely by the late Prof. A. J. Howe. It is applied when diluted to relieve pain, either deep-seated or superficial. It is not adapted for internal use.—American Dispensatory, new edition.

Dyspepsia Fermentative Tablets. (141)

Each tablet is stated to contain

Salol	gr. $\frac{1}{4}$
Zinc sulfocarbolate.....	gr. $\frac{1}{4}$
Extract of nux vomica.....	gr. $\frac{1}{6}$
Creosote	gr. $\frac{1}{2}$
Betanophthol	gr. $\frac{3}{10}$
Bismuth subnitrate.....	gr. $\frac{1}{4}$
Bismuth subgallate.....	gr. 1
Bismuth salicylate.....	gr. $\frac{1}{4}$
Oil of clove.....	q. s.

Dyspepsyn.

The formula is given as follows:

Saccharated pepsin.....	gr. 10
Saccharated pancreatin.....	gr. 5
Acid lactophosphate of lime.....	gr. 5
Exsiccated extract of malt equal to 1 teaspoonful of liquid ext. of malt.....	gr 10

Easy Physic. (89)

This is described as compound licorice powder compressed into lozenges.

Eau de Fees.

This is a hair preparation which is a solution of 5 parts of lead sulfite in about 12 parts of sodium hyposulfite, 31 parts of glycerin, and 352 parts of water.—H.

Eau Figaro.

This is a solution of lead sulfate or acetate with sodium hyposulfite and some glycerin.—H.

Echafolta. (118)

This is a concentrated liquid preparation of the plant echinacea. It is practically colorless and odorless. It is highly praised as an antiseptic and tonic—alternative in septic conditions, such as carbuncles, erysipelas, ulcers, abscesses, wounds, etc. It is applied externally in a 25% solution with water and internally it is given at the same time in doses of 2 to 5 drops.

Echino. (65)

A plastic compound. This is the description: "Each pound contains kaolin, 2220; sulph, 960; combined with arnica, bryonia, echinacea, eucalyptus oil, lobelia, boracic acid, oil gaulth, glycerine, q. s. ad."

Echinol. (131)

This is a concentrated liquid preparation of echinacea, which is stated to be ten times the strength of the crude drug, and is designed for the convenient manufacture of ointments and other compounds of echinacea intended for local application.

Echitone. (190)

This is stated to represent the following drugs in the fresh condition:

Echinacea angustifolia.....	gr. 180
Viola tricolor.....	gr. 180
Iris versicolor.....	gr. 30
Aromatics.....	

The total amount is not stated. It is recommended for the internal treatment of eczema.

Echthol. (19)

This is described as an antipurulent containing the active principles of echinacea and thuja. It is recommended for carbuncles, boils, typhoid fever, erysipelas, abnormal cell growths, and pus formations. A teaspoonful is administered 3 times a day and it is also used externally.

Eczemacide. (181)

This is stated to be composed of "thymenthol," glycerin and nitric acid, with 15 grains of acid nitrate of mercury to each pint.

Eczemarol. (135)

This is stated to be composed of acetanilid, resorcin, zinc oxid, ichthyol, oil of cade, and pyroligneous acid with a lanolin base.

Eczemol. (76)

This is stated to be a mixture of antiseptic oils, hydrocyanic acid, nitric acid, mercury bichlorid, and glycerin.

Edison's Polyform.

This is the formula according to the specifications of English patent:

Chloral hydrate.....g.	30
Camphor	60
Oil of peppermint.....drops	5
Oil of clove.....drops	5
Morphine sulfate.....g.	2
Amyl nitrite.....g.	3
Salicylic acid	5
Ether	50
Chloroform	90
Alcohol	110

Egeriol. (217)

This is described as an antiseptic alkaline solution containing menthol, eucalyptol, thymol, gaultheria, baptisia, boric acid, and aromatics.

Egg Emulsion of Cod Liver Oil Improved. (159)

This is stated to contain 40% of pure cod liver oil combined with nutrients, egg and brandy.

Egmol. (159)

This is described as a 40% emulsion of olive oil.

Egyptian Eye Salve.

This is said to be composed of the following (N. I.):

White resin.....av.oz.	12
Burgundy pitch.....av.oz.	1
Yellow wax.....av.oz.	1
Mutton suet.....av.oz.	1
Venice turpentine.....av.oz.	1
Balsam of fir.....av.oz.	1

Eigons. (62)

The eigons are a group of bromin and iodine compounds of albumin. They are designed to take the place of the iodids of potassium, sodium and ammonium and of bromid of potassium. The following eigons are described in this book, viz.: Brom-Eigon, Iodo-Eigon, Iodo-Eigon Sodium, Pepto-Brom-Eigon, and Pepto-Iodo-Eigon.

Eikonogen.

This is a chemical largely used for photographic purposes.

Eka-Iodoform. (178)

This is described as a pure iodoform prepared by electrical synthesis and sterilized with 1/20% of paraform (solid formaldehyde).

Ektogan.

This is a mixture of zinc hydroxid and dioxid containing about 50% of each and is equivalent to about 8% of active oxygen. It occurs as a yellowish-white, odorless, tasteless and insoluble powder. It is used externally in wounds and in skin diseases in the form of a moist dressing mixed with citric, tartaric or tannic acid whereby oxygen is liberated. With iodids it develops iodine.—Ph. Post.

Elchina.

This is a compound cinchona elixir stated to contain 0.32% of quinine, 2% of sodium glycerophosphate and 1% of tincture of nux vomica. Mixed with wine and in some cases with 3% of hydrochloric acid it is considered useful in dyspepsia and some weakened conditions of the system.

Electric Headache Cures.

These all consist essentially of an alcoholic solution of essential oil of mustard, which is usually sprinkled on a small tuft of cotton inclosed in a wide-mouthed bottle. The twisted wires in these bottles are placed there simply to delude a gullible public.

Electrozone. (37)

This is the way this "wonderful" preparation has been described in advertisements: Antiseptic, germicide, disinfectant, non-toxic, non-irritant. A product of electricity made from seawater and containing compounds identical with the solids of the blood. Na ClO, Mg Cl₂ O₂, K Cl O, K Br O, Na IO, etc. These compounds are liberated by the process of electrolysis and held in solution. Etc., etc.

Elepizone.

This is composed of about the following:

Magnesium bromid	dr. 3
Sodium bromid	dr. 3
Water	f.oz. 1½
Oil of cassia	drops 2
Simple syrup, to make.....	f.oz. 4
Solution of carmine.....	to color
—N. I.	

Elixir Anti-Dyspeptic. (Elixir Pepsin and Thymol Comp.) (221)

Each dessertspoonful is stated to contain 1 grain each of pepsin and cascara sagrada, 2 grains of pancreatin, ½ grain of ipecac, 1/60 grain of strychnine with the active constituents of 30 minims of "antiseptic solution."

Elixir Aphrodisiac. (207)

Each fluidounce is stated to represent 30 grains each of damiana and saw palmetto, 20 grains each of coca and kola, and 1 fluidram of diluted phosphoric acid.

Elixir Bromides Comp. (141)

Each fluidounce is stated to contain 20 grains each of the bromids of strontium, sodium and ammonium in combination with 20 minims of tincture of henbane and 1 fluidram of tincture of valerian. It is used for various forms of nervous irritability.

Elixir Cascanata.

See Cascanata.

Elixir Chloralamid. (115)

Each fluidounce is stated to contain 15 grains of chloralamid. It is considered a safe and efficient hypnotic.

Elixir Chlor-Lactated Pepsin. (160)

Each fluidounce is stated to contain:

Sac. pepsin, U. S. P., 1880...	gr. 160
Sac. pencreatin	gr. 5
Hydrochloric acid	gr. 3
Lactic acid, U. S. P., 1880...	gr. ¾

For the powder, see Chlor-Lactated Pepsin.

Elixir Chloro-Calcium. (182a.)

This is stated to contain 40 grains of pure calcium chlorid to the fluidounce.

Elixir Creoferrate.

See Creoferrate Elixir.

Elixir Digitalin Compound.

Each fluidram is stated to contain 1/100 grain each of digitalin and nitroglycerin and 1/50 grain of strychnine sulfate.

Elixir Piphthero Comp. (60)

This is the formula as printed by the manufacturers:

Liquor naphthalini purific,
Liquor guaiacoli,
Oleoresinæ pini alpanienis
(alpine pine),
Muscarini,
Baptisini and elix. aromat., q. s.

The same company also puts up a Pulvis Diphtheriticus, which see.—W. D.

Elixir Eupnein. (179)

Each dose of 2 fluidrams is stated to contain 1/24 grain of heroin, 2 grains of terpin hydrate, 5 grains of creosote, in a menstruum containing 30% of alcohol with glycerin and aromatic essential oils.

Elixir Galega-Vera. (35)

This is stated to contain the active principles of Galega officinalis, G. tephrosia and G. apolinea.

Elixir Guaiacol Co.

See Triacol.

Elixir Halogens Compound. (188)

Each fluidram is stated to contain 9 grains of the combined iodids, bromids

and chlorids of calcium, magnesium, sodium, potassium and iron with "compound ext. sarsaparilla" and suitable aromatics.

See also Elixir Iodide and Bromide of Calcium Compound.

Elixir Heroterpine. (Elixir of Heroin and Terpin Hydrate.) (179)

Each fluidounce is stated to contain 1/6 grain of heroin and 8 grains of terpin hydrate. The preparation also contains 32% of alcohol with glycerin and aromatic essential oils.

Elixir Iodide and Bromide Calcium Compound. (192)

Each fluidram is stated to contain 10 grains of the combined iodids, bromids and chlorids of calcium, potassium, sodium, iron and manganese with compound syrup of sarsaparilla, laxatives and aromatics.

See also Elixir Halogens Compound.

Elixir Iodo-Bromide of Calcium Comp. (Elixir Iodo-Tilden's.) (194)

This is the formula as given on the label: Each fluidounce contains 72 grains of the combined salts of bromine, iodine, chlorine, calcium, magnesium, iron, sodium and potassium, not chemically united but held in solution, together with 1 ounce of the combined constituents of stillingia, sarsaparilla, rumex, dulcamara, lappa, taraxacum and menispermum.

There is also an Elixir of Iodo-Bromide of Calcium Comp. with Mercury, 1 fluidram of which contains 1/100 grain of mercury bichlorid.

Elixir Lactenzyme. (63)

Each teaspoonful is stated to contain 5 grains of "lactenzyme powder," which see.

Elixir Lactenzyme with Phosphate of Iron, Quinine and Strychnine is stated to contain in each teaspoonful

Lactenzymegr. 5
Iron phosphategr. 1/2
Quinine phosphategr. 1/2
Strychnine phosphategr. 1/128

This preparation is a valuable nerve tonic and restorative.

Elixir Lactopeptine. (145)

Each fluidounce is stated to represent 38 grains of "lactopeptine."

Elixir of Lactopeptine with Gentian and Chloride of Iron.

Each fluidounce is stated to represent

Lactopeptinegr. 32
Gentiangr. 8
Protochlorid of iron.....gr. 8

Elixir of Lactopeptine with Phosphate of Iron, Quinia and Strychnia.

Each fluidounce is stated to represent

Lactopeptinegr. 32
Phosphate of iron.....gr. 4
Phosphate of quinia.....gr. 4
Phosphate of strychnia....gr. 1/16

Elixir Laxative Compound. (160)

Each fluidram is stated to represent 5 grains sodium "sulph." (probably "sulphate"), 1 1/2 grains each of leptandra and senna, 1/2 grain each of licorice root and fennel seed, and 1/20 grain each of powdered belladonna leaf and nux vomica.

Elixir Maltopepsine.

See Maltopepsine Elixir.

Elixir Nutrans.

Each fluidounce is stated to represent

Cocoagr. 20
Kola nutgr. 20
Damianagr. 30
Saw palmettogr. 30
Fresh beefoz. 2

It is recommended as a vitalizing tonic to the reproductive system.

Elixir Palmetto Compound. (192)

This preparation is said to contain in each fluidram 8 grains of saw palmetto berries, and 4 grains of couch grass and sandalwood.

Elixir Pancreo-Digestin. (188)

Each fluidram is stated to contain 10 grains of "pancreo-digestin," which see.

Elixir Pancreo-Digestin, Gentian and Chlorid Iron.

Each fluidram is stated to contain 5 grains of "pancreo-digestin" with elixir of gentian and iron chlorid.

Elixir Pancro-Pepsin. (181)

Each fluidram is stated to represent 10 grains of "pancro-pepsin," which see.

Elixir Pepdilactic.

See Pepdilactic Elixir.

Elixir Pepsin and Thymol Comp.

See Elixir Anti-Dyspeptic.

Elixir Peptenzyme.

See Peptenzyme Elixir.

Elixir Peptopancreatine Compound.

192

Each fluidounce is stated to contain 40 grains of peptopancreatine compound, which see.

Elixir Pinus Compositus. (Bechol.)

131

Each fluidounce is stated to contain

White pine (fresh bark)...	gr. 40
Wild cherry bark.....	gr. 40
Spikenard	gr. 5
Balm of gilead buds.....	gr. 5
Sassafras	gr. 4
Ipecac	gr. 2
Ammonium chlorid	gr. 4
Sanguinaria nitrate	gr. 1/12
Morphine acetate	gr. 1/2
Chloroform	m. 4

This preparation is also put up with heroin or codeine instead of morphine.

Elixir Piscidia Compound. (215)

This is an utero-ovarian sedative and anodyne, which is stated to contain in each fluidram 8 grains each of blackhaw and golden seal and 4 grains of Jamaica dogwood.

Elixir Purgans Aromatic. (117)

Each teaspoonful is stated to represent

Rhamnus purshiana	gr. 10
Cassia acutifolia (purif.)....	gr. 10
Euonymus atropurpureus....	gr. 8
Iris versicolor	gr. 4
Hyoscyamus niger (leaves)....	gr. 2
Aromatics, etc.	

Elixir Purgative. (181)

Each fluidram or teaspoonful represents 8 grains of cascara sagrada, 4 grains each of senna and wahoo, 2 grains each of blue flag and henbane, with aromatics.

Elixir Rhei Kalinatus. (181)

Each fluidounce is stated to represent 20 grains each of rhubarb and potassium bicarbonate, 10 grains each of golden seal, cinnamon and pancreatin, flavored with oil of peppermint.

Elixir Salicylic Comp. (212)

Each tablespoonful is stated to contain 20 grains of salicylic acid, 1½ grain of potassium iodid, 1¼ gr. of cimicifuga and 1 drop of tincture of gelsemium. The circular also states that this preparation has the advantages afforded by the combination of salicylic acid with soda in excess, thus forming a salt less corrosive and irritating.

Elixir Saw Palmetto and Santal Compound. (159)

Each fluidounce is stated to represent 120 grains each of saw palmetto berries and corn silk and 30 grains of sandalwood. It is diuretic and is said to have a sedative action on the genito-urinary tract.

Elixir Senecin and Viburnin. (Elixir Amenorrhea.) (160)

This is stated to contain senecin, viburnin, caulophyllin, hydrastis, pulsatilla and aromatics. It is used in amenorrhea and dysmenorrhea.

Elixir Six Bromides. (208)

Each fluidram is stated to contain 5 grains each of bromids of potassium and sodium, 3 grains of ammonium bromid, 1½ grains of calcium bromid, ½ grain each of lithium and iron, with cannabis and aromatics.

Elixir Six Iodides. (208)

Each fluidram contains 1/125 grain each of arsenic and mercury iodids, 1/12 grain of iron iodid, 1/10 grain of manganese iodid, and 1 grain each of sodium and potassium iodids with aromatics.

Elixir Three Chlorides.

See Henry's Three Chlorides.

Elixir Tonicum. (87)

Each 10 minims is stated to represent

Tincture of cinchona.....	m. 4
Tincture of nux vomica....	m. 1
Tincture of ignatia.....	m. 1
Tr. of German chamomile..	m. 1
Tincture of gentian.....	m. 1/2
Tincture of columbo.....	m. 1/2
Tr. of phosphorus.....	gr. 1/300
Aromatics	m. 2

Elixir Uroformin Comp. (63)

Each teaspoonful contains
 Uroformin (hexamethylene-
 tetramine)gr. 5
 Potassium acetategr. 5
 Fl. ext. couch grass.....m. 4
 Fl. ext. buchugr. 5
 Fl. ext. juniper berries.....gr. 4
 Fl. ext. corn silk.....gr. 4
 Hydrastoids, q. s.

It is employed in diseases of the urethra, bladder and prostrate.

Elixir Viburnum and Hydrastis Comp. (Uterine Tonic Sedative.) (221)

Each fluidounce is stated to represent 40 grains of cramp bark, 30 grains of golden seal, 20 grains of Jamaica dogwood and 10 grains of pulsatilla. This preparation is used in all kinds of pain incident to diseases of the sexual organs.

Elixir Vigorans. (Sohn's Wine Hypophosphites Comp.) (206)

Each fluidounce is said to contain
 Hypophosphite of calcium....gr. 6
 Hypophosphite of potassium...gr. 3
 Hypophosphite of sodium....gr. 3
 Hypophosphite of iron.....gr. $\frac{1}{2}$
 Hypophosphite of manganese..gr. $\frac{1}{2}$
 Hypophosphite of quinine.....gr. $\frac{1}{2}$
 Nux vomicagr. 1
 Adjuvants: wine and glycerin.

Elliman's Royal Embrocation.

The following is somewhat similar:

Oil of turpentine.....fl.dr. 4
 Oil of thyme.....fl.dr. 3
 Oil of amber, crude.....fl.dr. 1
 Soapgr. 130
 Caustic sodagr. 10
 Water, to make.....fl.oz. 16

—N. I.

According to Hager, it consists of the whites of 2 eggs, about 50 g. water, 50 g. crude wood vinegar, 60 g. alcohol and 8 g. oil of turpentine.

Elytrones. (Antiseptic Vaginal Suppositories.) (131)

Each suppository is stated to contain 75 grains of boroglyceride solution, 5 minims of "colorless hydrastis," 40 minims of "thymoline (equivalent)," $\frac{1}{2}$ grain of zinc sulfocarbolate, 2 grains of acetanilid, and enough gelatin. Formula

B has the same composition with the addition of 5 grains of ichthyol to each suppository.

Emol.

This is a native magnesium silicate similar to talcum and to fuller's earth. It is used as a dressing for wounds.

Emoleo. (Oleo-Stearate of Zinc.) (121)

This is described as a semi-fluid preparation for use in the treatment of diseases of the upper respiratory passages. It is said to be non-irritating, easily applied, and readily diffusible. It is supplied plain or in combinations with iodine, Peru balsam, sodium bicarbonate and carbolic acid, or camphor and menthol.

Emollientine. (159)

This is stated to be a combination of aluminum hydrate, carbolic acid, isarol, lead oxid, corrosive sublimate, and zinc sulfocarbolate. It is used in the treatment of burns, scalds, bruises, etc.

Empyroform. (178)

This is stated to be a condensation product of birch tar and formaldehyde. According to the patent specifications it is made by boiling birch tar with formaldehyde solution and pouring the hot liquid into hydrochloric acid. When cold the solid mass is collected and washed until free from acid. It forms a grayish-brown, almost odorless powder, insoluble in water but soluble in acetone and chloroform.

It is an antipruritic, sedative and desiccant. It is said to be superior to tar and free from irritant or toxic effects. It is claimed to be useful in all stages of eczema, psoriasis, lichen, urticaria, prurigo, pityriasis, etc. It is applied as a 5 to 10% ointment, 10 to 20% zinc paste, 10 to 20% tincture or 37 $\frac{1}{2}$ % suspension.

Emulgates.

This is a name given to what may be termed "solid emulsions," these being triturations of oils, oleoresin of male fern or other similar preparations with equal parts of roborat (lecithalbumin). The products are dry, light and rather

pleasant tasting. A number of these preparations have been put on the market, such as castor oil, cod liver oil emulgate, male fern emulgate, copaiba emulgate, etc.

Emulgen.

This is an emulsifying agent which is stated to be composed of tragacanth, 10, acacia, 5, gluten, 5, glycerin, 20, alcohol, 10, and water, 50. One part will emulsify 5 parts of cod liver oil.

Emulsine. (133)

Emulsol. (45)

Both of these are emulsifying agents put up for the easy emulsification of oily substances.

Endermol. (51)

This is stated to be a "compound of stear-amide with hydrocarbons of the paraffin series" (stear-anilide with petrolatum?). It is an ointment base which is stated to be miscible with all drugs, holding them in a very fine divided state, the mixture being readily absorbed.

Endometritis Tablets. (141)

Each tablet is stated to contain

Ext. viburn. prunif.....	gr. 2
Ext. hamamel. virg.....	gr. 1
Ext. nux vomica.....	gr. 1/12
Ergotin	gr. 1/2
Hydrastin, resin	gr. 1/16

These tablets are recommended for inflammation of the uterus and its lining membranes.

Enesol. (Mercury Salicyl-Arsenate.)

This is stated to be made by the combination of equal parts of basic mercury salicylate and methylarsenic acid. It is a white powder soluble in 25 parts of water. It contains 38% of mercury and 14% of arsenic, is said to be less irritating and less toxic than either of its constituents, and is used hypodermically for syphilis.

Eno's Fruit Salt.

According to N. I., this contains practically the following:

Rochelle salt	parts 55
Tartaric acid	parts 75
Sodium bicarbonate	parts 84

Enterol.

This is a name given to a mixture of the three isomeric cresols and is recommended as an enteric antiseptic. In solutions of 2% it is said to be non-toxic in doses of from 1 to 5 grams daily. The substance has the unpleasant odor and caustic effects of the cresols and is therefore advised that when used it should be administered in the form of pills or capsules.

Enteronol.

This is the formula as it is given: "Ipecac, sub. nit. bismuth, latalia rad., camphor, lupulin, caffein, and rheum."

Enzymol. (70)

This is a mixture of enzymes used as a physiological and surgical solvent. It is stated to dissolve septic matter, false fibrinous membrane, corrects offensive odors, etc.

Eosote. (Creosote Valerianate.)

This is a yellowish, oily liquid, insoluble in water, readily soluble in alcohol and ether. It is used mostly in phthisis. The dose is 3 to 10 minims 3 times in capsules or in milk.

Ephredine Hydrochlorid.

This is an alkaloidal salt derived from the leaves of Ephedra vulgaris. It is in white, needle-shaped crystals, soluble in water. It is used as a mydriatic in 10% solutions.

Epicarin.

This is a condensation product of creosotinic acid and betanaphthol, recommended by Dr. Kaposi for many skin affections. It forms colorless or yellowish needles, sparingly soluble in water, readily in alcohol, ether, acetone and soaps. It has the character of a strong acid, forming well crystallized salts, which, however, are sparingly soluble in water, particularly the sodium salt. On exposure to air, it acquires a reddish color, due to oxidation. Being a strong acid it is incompatible with alkaline hydroxids or carbonates, especially those of sodium with which it forms an almost insoluble salt.

Epicarín is a non-poisonous antiseptic and parasiticide. Administered internally it is excreted mostly undecomposed. It has been found useful in the treatment of skin diseases, particularly scabies, tinea tonsurans, prurigo and some forms of eczema. It is used externally in the form of a 5 to 20% ointment with petrolatum or wool fat or in the form of a 10% oily or alcoholic solution.

Epidermin.

This is an ointment vehicle consisting of equal parts of white wax, glycerin, acacia and water. Rub the acacia with the glycerin and water to a smooth paste, warm to 65° C., add the wax, previously melted, and stir until cold. A white, sticky mass is obtained which, when treated with 50% of water, gives a white emulsion.

Epinephrin.

This is the name given by Prof. J. J. Abel of Johns Hopkins University to the active constituent of the suprarenal glands.

Epiosin.

This is said to be a derivative of morphigenin, and occurs in glistening prismatic crystals, soluble in water, alcohol and chloroform. It is analgesic and hypnotic, but is also slightly toxic and must be administered with care. The dose is 1 to 2 grains.

Epirenan.

This is stated to be a sterilized 1:1000 physiological salt solution of the chlorid of the purified active principle of the suprarenal bodies.

Ergaloids. (89)

These are elastic capsules, each containing

Apiol, green	m. 5
Ergotin	gr. 1
Oil of savin.....	m. 1/2
Oil of rue.....	m. 1/2
Aloin	gr. 1/10

Ergo-Apiol. (183)

This occurs as elastic capsules, each one containing

Apiol (special)	gr. 5
Ergotin	gr. 1
Oil of savin.....	gr. 1/2
Aloin	gr. 1/8

The apiol (special) is stated to be made by a new process, "not the almost inert complex concentration" known by this name.

Ergone. (159)

This is described as a pure, concentrated and aseptic extract of ergot, corresponding in strength to the U. S. P. fluid extract. It is said not to contain ergotinic or sclerotic acid or other irritating substances.

Ergot Aseptic.

This is a preparation of ergot of double the strength of the U. S. P. fluid extract of ergot. Ergotinic acid is stated to be eliminated and the finished product is sterilized. No preservative is added. It is put up in glass bulbs of 1 cc. each and is intended for hypodermic administration.

Ergotin.

This is a name now commonly applied to soft solid extract of ergot, such as the U. S. P. extract of ergot.

Ergotin-Styptic.

This is stated to be fluid extract of ergot combined with 5% of stypticin. It is administered in from 10 to 15 drop doses in cerebral disturbances and in the neuroses accompanying menstrual disorders.

Ergotole. (182a.)

This is said to be 2½ times the strength of the U. S. P. fluid extract of ergot. It is stated to be free from inert, irritating and nauseating constituents. It may be administered hypodermically or by mouth.

Ernutin. (32)

This is described as a preparation of ergot "containing the specific active principles, chief of which is the alkaloid ergotoxine, in a state of purity, which up to the present time has never been approached." It is put up for administra-

tion by the mouth in 1-ounce bottles and for hypodermic use in 10-minim sealed and sterilized bulbs. The initial hypodermic dose is 5 minims.

Erosan.

This is described as a mixture of 10 g. of potassium sulfoguaiacolate, 0.3 g. of dionin, 5 g. of fluid extract of orange peel, 30 g. of distilled water and 105 g. of simple syrup.

Eripiol. (Dr. Schrader.) (131)

This is in capsules each containing 5 minims of apiol (green), 3 grains of gossypin (resinoid) and 1 grain of ergotin (Bonjean's process).

Erythrol.

This is a double salt of bismuth iodid and cinchonidine hydroiodid. It is a brown-red powder, insoluble in water or alcohol. It is recommended for some forms of dyspepsia as a digestive and anodyne in doses of $\frac{1}{2}$ to 1 grain 3 times a day.

Erythrol Tetranitrate. (Erythrol Nitrate — Tetranitrol — Tetranit-rin.) (130)

This is obtained by the nitration of the tetratomic alcohol erythrite. It forms colorless crystalline scales, insoluble in cold water, readily soluble in alcohol. On percussion it explodes much like nitroglycerin.

It is a vasodilator and antispasmodic like nitroglycerin. Its action is slower and more lasting; it begins in 15 minutes and persists for 3 or 4 hours. It is recommended in angina pectoris and vascular diseases. Because of its explosiveness it is marketed in the form of an alcoholic solution and as tablets, the later containing $\frac{1}{2}$ grain each. One or two tablest are given every 4 to 6 hours.

Erythrophleine Hydrochlorid.

This is in yellowish, crystalline granules, which are soluble in water. It has recently been lauded as a local anæsthetic. It is slower, but more intense in action than cocaine. It is used in a 1/20 to 1/10% solution.

Escatol. (118)

This is a preparation which was used largely by the late Prof. A. J. Howe (eclectic) and is a mixture of salicylic acid, zinc chlorid and petrolatum. It is put up in three strengths, single double and quadruple, for different cases. It is used for various kinds of ulcers, sores of a cancerous character, fissures of the anus, etc.

Esencia de Calisaya. (159)

Each fluidounce is stated to represent 24 grains of standard cinchona calisaya bark.

Esencia de Coca. (159)

This is described as an agreeable liqueur representing in concentrated form the stimulating properties of coca leaves.

Eserine. (Physostigmine.)

This is in white, hygroscopic laminæ, sparingly soluble in water, readily in alcohol, ether and chloroform. It is a spinal depressant and antitetanic in traumatic tetanus, tonic convulsions, strychnine poisoning, etc., peristaltic stimulant in atonic conditions of the intestine, analgesic in neuralgias, muscular rheumatism, etc., and myotic.

Dose: 1/200-1/100 grs. 2 or 3 times daily. It is also used successfully as a veterinary remedy in the colic of horses and cows, etc. It is generally employed in the form of soluble salts, such as the sulfate or salicylate, particularly the former, as it is quite soluble in water. Its physiological antidotes are atropine, chloral hydrate, artificial respiration and stimulants.

Eserine-Pilocarpine.

This is made by crystallizing together 1 part of eserine salicylate and 2 parts of pilocarpine hydrochlorid. It is a white powder soluble in water and alcohol, and used hypodermically in the colic of horses in doses of 3 to 6 grains.

Eserine Oil.

This is a solution of eserine salicylate in olive oil. It is used for applications to the eyes.

Eskey's Mercuricide Ointment.

See Mercuricide Ointment.

Eskay's Neuro Phosphates.

This is described as "a liquid preparation of a food-like form of phosphorus containing the glycerophosphates of strychnine, sodium and calcium.

Espic Cigarettes.

The formula, according to Trousseau, is as follows:

Belladonna leaves	parts 24
Henbane leaves	parts 12
Stramonium leaves	parts 12
Phellandrium leaves	parts 4
Extract of opium.....	part ½
Cherry-laurel water.....	sufficient

The leaves, well-dried and free of their ribs, are cut up and mixed. The extract is dissolved in the cherry-laurel water and the leaves are uniformly dampened with this solution. The paper which is used in making the cigarettes is also previously washed in a maceration of the leaves above named in cherry-laurel water and carefully dried. These cigarettes are used for asthma, the patients smoking one or two during an attack.—W. D.

Essence of Pepsine. (70)

This is described as a solution of the milk-curdling and proteolytic ferments of the gastric glands in a menstruum containing 18½% by volume, the solution being prepared by direct extraction of the peptic glands of the stomach. Essence of pepsine has the action of both rennin and pepsin and is recommended by the manufacturers for preparing milk for ingestion and in cases in which pepsin is indicated.

Essence of Smoke.

See Wright's Condensed Smoke.

Essence of Vera Diastase.

See Vera Diastase Essence.

Ester-Dermasan.

This is superfatted soap containing 10% of salicylic acid and 10% of the salicylic esters of benzoyl and phenol. It is used externally in the treatment of rheumatism, about 5 to 10 g. to be ap-

plied to the affected parts once or twice a day.

Ethyl Bromid. (Brom-Ethyl—Hydrobromic Ether.)

This must not be confounded with ethylene bromid. It is a clear, colorless, volatile, inflammable liquid, of an odor and taste like chloroform, sp. gr. 1.45 and boiling at about 102° F. It is sparingly soluble in water, freely so in alcohol, ether and oils. It should be kept from light and air as it becomes brown from liberation of bromin and should then not be used. It is employed as an anesthetic in minor surgery, anesthesia occurring within 1 minute and lasting only a few minutes unless repeated; 1 to 6 fluidrams is used by inhalation. Internally it is used as a nerve sedative in epilepsy, hysteria, etc., the dose being 5 to 10 drops.

Ethyl Carbamate.

See Urethane.

Ethyl Chlorid. (Monochlorethane.)

This is ordinarily a gas, but appears on the market as a compressed liquid contained in closed tubes. In these tubes it is a colorless liquid, boiling at 54° C., and very inflammable. It is used for local anesthesia in minor and dental surgery, the liquid being allowed to spray upon the parts when it soon produces intense local refrigeration. The tube from which the spray issues should be held at a distance of from 6 to 10 inches from the part to be anesthetized.

Ethyl Iodid. (Hydriodic Ether.)

This is a clear, colorless, non-inflammable liquid, sp. gr. 1.93, boiling at 158° C. It is nearly insoluble in water but freely soluble in alcohol and ether. It should be kept from light and air. It is used by inhalation, 10 to 15 drops several times daily, for asthma, chronic bronchitis, chronic laryngitis, etc., also internally in chronic rheumatism, scrofula, secondary syphilis, etc., in doses of 3 to 9 m.

Ethyl-Morphine Hydrochlorid.

See Dionin.

Ethyl Salicylate.

See Sal-Ethyl.

Ethylene Bromid. (Dibromethane.)

This should not be confounded with the relatively non-poisonous ethyl bromid. It is a slightly brownish, volatile liquid, very heavy (sp. gr. 2.189) of a chloroformic odor, insoluble in water; soluble in alcohol. It should be protected from light. It is used as a nerve sedative, as in epilepsy, in doses of 1 or 2 minims 2 or 3 times daily, in capsules or emulsion.

Ethylenediamine. (178)

This is a substitution compound of ethylene and ammonia. It is a clear, colorless, thick liquid, sp. gr. 0.97, boiling at 117° C. without decomposition, and having a strong alkaline reaction, an ammoniacal odor, and a caustic taste. It is freely soluble in water; it dissolves albumin, even when boiled, very readily. Being a strong base, its incompatibilities are about the same as those of sodium hydrate.

It is said to be non-corrosive. It is recommended as an albumin solvent for the solution of false membranes in diphtheria and similar affections of the mucous membranes. It is said that this substance can dissolve pus corpuscles. It is recommended for use in the form of kresamine, which see.

Ethylenediamine-Mercury Sulfate.

See Sublamine.

Ethylenediamine-Silver Phosphate.

See Argentamine.

Ethylenediamine-Trikresol.

See Kresamine.

Eubiol.

This is a hemoglobin preparation occurring as a powder and a 50% solution. The powder is odorless, tasteless and soluble in cold water.

Eucaïne.

Eucaïne B, beta-eucaïne, or more properly beta-eucaïne hydrochlorid, is chemically benzoyl-vinyl-diacetonalkamine hydrochlorid. It forms a white,

crystalline powder, soluble in 20 to 30 parts of water at the ordinary temperature, but more soluble in warm water, soluble in 25 to 30 parts of alcohol, producing neutral solutions which can be sterilized by boiling without change. The saturated aqueous solution gives no precipitate with mercuric chlorid, which distinguishes it from the alpha-eucaïne salt. It is incompatible with alkalies and their carbonates.

Beta-eucaïne is a local anesthetic like cocaine, but weaker and devoid of the stimulant properties of the latter. It does not dilate the pupil of the eye nor does it contract the blood vessels as does cocaine. It has the advantage of stability, even on prolonged boiling. It may be used in all cases in which cocaine is indicated as a local anesthetic, especially in ophthalmology. It may be applied in a 2 or 3% solution to the eye, 5 to 10% solution to the nose and throat, and 5 to 10% ointment for hemorrhoids. It is used frequently instead of cocaine in Schleich's method of infiltration anesthesia.

Eucaïne A (alpha-eucaïne), or more correctly alpha-eucaïne hydrochlorid, is a different compound chemically from beta-eucaïne; it is more toxic and more irritant than beta-eucaïne and is used but little. It is used as a substitute for eucaïne in general and minor surgery. It is soluble in 10 parts of water.

Eucaïne Lactate.

This is a salt similar to beta-eucaïne hydrochlorid; 119 parts of the lactate contain as much eucaïne as 100 parts of the hydrochlorid. It is a white powder, very soluble in water. It is very effective as a local anesthetic and is said to be non-irritating, hence it is preferred for the eye, ear, nose, throat, and in dentistry, and also in infiltration anesthesia.

Eucaloids. (23)

This is a name given to gelatin capsules, each containing 5 minims of pure oil of eucalyptus.

Eucalypteol. (Eucalyptene Hydrochlorid.)

This is derived from oil of eucalyptus. It is in colorless, scaly, almost tasteless crystals of a camphoraceous odor. It is insoluble in water, but soluble in ether, chloroform and alcohol.

This is used as an internal antiseptic, the dose being 15 to 25 grains.

Eucalyptol.

This is obtained from oil of eucalyptus, but is also identical with cajeputol, from oil of cajeput, and cineol, from oil of wormseed. It is a colorless liquid, of camphoraceous odor. It is insoluble in water, but soluble in alcohol, ether and oils.

It is used externally as an antiseptic and rubefacient, by inhalation and spray in lung and bronchial affections, and internally in doses of 5 drops in capsules or emulsion.

Eucalyptus and Honey Compound. (36)

This is stated to represent eucalyptus, blood root, white pine bark, balm of gilead buds, sassafras bark, and cumin seed with 2 minims of chloroform and $\frac{1}{4}$ grain of morphine acetate to each fluidounce. The preparation also contains 10% of alcohol.

Eucamul. (23)

This is an emulsion of oil of eucalyptus containing glycerin and honey. Each fluidram contains 2 minims of oil of eucalyptus.

Eucasin.

This is a casein compound containing 95% of casein and 5% of water. It is prepared from cow's milk. It is recommended as a dietetic for convalescents, invalids, or persons afflicted with lung, stomach or kidney troubles. The dose is a tablespoonful 2 to 4 times daily in soup.

Eucodeine. (Codeine Brommethyllate.) (172)

This is said to have the same sedative properties as codeine without the latter's tendency to induce clonic convulsions.

It is a crystalline powder, soluble in water, and is used in the treatment of bronchitis and phthisis in doses of $\frac{1}{3}$ to $\frac{1}{2}$ grain.

Eucol. (84)

Described as 20-minim capsules containing cod liver oil, beechwood creosote, eucalyptol, oil of santal and cubebs. They are recommended for bronchitis, colds, consumption, etc.

Eucesyl. (143)

This is a reddish-brown antiseptic liquid stated to contain 50% of cresylic acid.

Eudermol. (Nicotine Salicylate.)

This is in colorless crystals soluble in water and alcohol. It is used as a 1/10% ointment for scabies and as a 1% ointment in veterinary practice, as for sarcoptic mange. It should not be confounded with endermol.

Eudoxin. (Tetraiodphenolphthalein-Bismuth.)

This is the bismuth salt of nosophen, containing 53% of iodine and 14 $\frac{1}{2}$ % of bismuth. It is an odorless, tasteless, insoluble, brownish powder.

It is used in stomachic and intestinal troubles in doses of 3 to 8 grains. It is especially useful in infantile diarrhea in doses of $\frac{1}{2}$ to 1 grain. It is said to be non-toxic.

Euformol. (159)

Each fluidounce is stated to contain

Oil of eucalyptus.....m.	3/8
Oil of wintergreen.....m.	3/10
Thymolgr.	1/2
Mentholgr.	1/12
Boric acidgr.	12
Fluid ext. wild indigo.....m.	1 1/4
Solution of formaldehyde, 40%	m. 60

It is germicide, antiseptic, and deodorant. It is recommended for external application and for disinfection of excreta in infectious diseases. For general use it should be largely diluted.

Eugallol. (Pyrogallol Monoacetate.) (109)

This is a solution of 2 parts of monoacetyl pyrogallol in 1 part of acetone. It

is a syrupy, dark yellow, transparent liquid of agreeable odor, readily soluble in water and acetone. It acts as an energetic substitute for pyrogallol, but is liable to produce local irritation when applied to the skin. It is recommended for external use in old and persistent cases of psoriasis. It is applied pure by pencilling once a day, covering the painted part with zinc oxid, suspending the application for a few days if followed by irritation.

Eugenol. (Eugenic or Caryophyllic Acid.)

This is a substance present in a number of volatile oils, such as clove, pimento, cinnamon, sassafras and bay. It is an aromatic, colorless, oily liquid. It is almost insoluble in water, readily soluble in alcohol, ether and chloroform.

It is a powerful antiseptic. It has been recommended in the treatment of tuberculosis in doses of $\frac{1}{4}$ to 1 fluidram.

Eugoform. (Acetylated Methylene-Diguaiaicol.)

This is produced by the action of formaldehyde upon guaiacol. It is a grayish-white, nearly odorless powder, insoluble in water. It is used as a dusting powder, being recommended for abraded surfaces in children, where the injuries are so located as to be subjected to wetting. In the form of 5 to 10% ointment it is used for wounds, burns, etc.

Soluble eugoform is a 50% solution of eugoform in acetone.

Eukinase.

This is a digestive ferment derived from the duodenum of the pig. It is a yellow powder which is marketed in the form of capsules which are not acted upon when swallowed until they pass the stomach. It is used in intestinal indigestion.

Eulyptol. (Ulyptol.)

Carbolic acid.....part 1
Oil of eucalyptus.....part 1
Salicylic acidparts 6
—Schmelz.

Eumenol.

This is the fluid extract of a Chinese plant known under the names Tong-kui, Kau-kui, Schon-ki and Man-mu. It is an emmenagogue and uterine sedative in functional amenorrhea and dysmenorrhea. The dose is a teaspoonful 3 times a day.

Eumetra. (68)

Each tablet is stated to contain

Hydrastinegr. $\frac{1}{2}$
Ext. henbanegr. $\frac{1}{2}$
Ext. wahoogr. $\frac{1}{2}$
Ext. celery seed.....gr. $\frac{1}{2}$
Ext. black cohosh.....gr. 1
Ext. black willowgr. 1
Ext. black haw.....gr. 1 $\frac{3}{4}$
Ext. cannabis indica.....gr. $\frac{1}{16}$
Capsicumgr. $\frac{1}{8}$
Strychnine sulfategr. $\frac{1}{120}$
Socotrine aloesgr. $\frac{1}{16}$
Excipient, q. s.

It is used for uterine irritation, endometritis, etc.

Eumydrin. (Methylatropine Nitrate.)

It is a white, crystalline salt, odorless, permanent in the air, readily soluble in water or alcohol but sparingly in ether or chloroform; 100 parts of it contain the equivalent of 90 parts of atropine sulfate. It is incompatible with alkalies and their carbonates.

Eumydrin is a mydriatic and antihydrotic, replacing atropine sulfate both internally and externally in corresponding doses. It is claimed that it dilates the pupil more rapidly than atropine and the dilatation is of shorter duration—being intermediate in these respects between atropine and homatropine. It is said to be much less toxic than atropine so that larger doses may be given to secure the effect. It is particularly recommended for the treatment of night sweats, whooping cough and enuresis. Internally as an antihydrotic the dose is $\frac{1}{60}$ to $\frac{1}{24}$ grain. Externally it is used as a mydriatic in solutions about $\frac{1}{10}$ stronger than the usual atropine solutions.

Eunatrol. (Sodium Acid Oleate.)

This is a light yellow substance, readily soluble in water and alcohol. It is supplied in the form of powder and chocolate-coated pills. It is recommended in the treatment of gall stones, being an excellent cholagogue. The dose is 4 pills 3 times a day.

Eupeptic Hypophosphites. (143)

This is stated to be a combination of the hypophosphites of potassium, calcium, iron and manganese and the tonics quinine and strychnine, associated with the digestive ferments of the gastric juice. It contains wine as a vehicle; no sugar is added.

Euphorin. (Phenyl Urethane—Carbamate of Ethyl and Phenyl.)

This compound is closely related to urethane (ethyl carbonate, U. S. P.). It is in colorless needles or a white powder, having a faint aromatic odor and clove-like taste. It is almost insoluble in water, readily soluble in diluted alcohol, alcohol or ether. It is an anodyne, antipyretic and antiseptic. It is recommended in rheumatism, sciatica, headache, etc. It is recommended externally as a dusting powder in venereal and skin diseases, ulcers, burns, etc. The dose is 8 to 15 grains, dissolved in wine or suspended in water. Externally it is used as a powder, in lanolin ointment, or in superfatted soap. It should not be confounded with euphene.

Euphthalmine Hydrochlorid. (178)

This is a mandelic acid derivative of beta-eucaine. It is a colorless, crystalline powder, readily soluble in water and in 2 parts of alcohol. It produces prompt mydriasis free from anesthetic action, pain, or corneal irritation. It has little or no effect upon accommodation. In its effects on the general system it closely resembles atropine. It is used in the form of a 2 to 10% solution, 2 or 3 drops of which are instilled in the eye.

Eupnein Elixir.

See Elixir Eupnein.

Euporphin. (Apomorphine Methylbromid.) (172)

This is colorless needles or scales, easily soluble in water or alcohol. It is intended to replace apomorphine especially as an expectorant; it is not so apt to produce vomiting in case of an overdose. Its solutions are more permanent to light and air

Eupyrine.

This is a compound of parphenetidin with vanillin ethyl-carbonate. It occurs as light yellow, needle-shaped crystals, tasteless, having a faint odor of vanillin, insoluble in cold water, sparingly soluble in warm water and in cold alcohol, readily soluble in warm alcohol, ether and chloroform. It is claimed to be a mild stimulating antipyretic, especially for patients with a weak stomach or otherwise sensitive. Dose, 8 to 15 grains.

Euquinine. (Euchinin — Quinine Ethyl-Carbonate.)

This is a light, fleecy conglomeration of delicate, white needles which are practically tasteless. It is sparingly soluble in water but readily soluble in alcohol, ether and chloroform. It forms bitter salts with acids and should therefore not be prescribed with acids as these develop the bitter taste. It is used in place of quinine on account of its tastelessness. It is said not to cause cinchonism nor to derange the stomach. The dose is the same as that of quinine.

Eureka Dental Anesthetic.

This contains 3¼% of cocaine hydrochlorid with some carbolic acid and oil of rose.—Sadtler.

Euresol. (Resorcin Monacetate.)

This is a thick, yellowish, oily liquid, of an agreeable odor and soluble in acetone. Its action is similar to that of resorcin but milder and more lasting because of the gradual liberation of phenol. It is recommended for acne, sycosis, seborrhea and particularly in the treatment of chilblains. It is applied as a 5 to 20% ointment or as an acetone solution.

Euresol Soap.

This is a soft soap, supplied in tubes and containing euresol, eucalyptol and oil of turpentine. It is used for chilblains.

Eurobin. (Chrysarobin Triacetate.) (109)

This is insoluble in water but soluble in chloroform, ether and acetone. It is used instead of chrysarobin and skin diseases in a 1 to 10% solution in acetone or with 5 to 10% of saligallol.

Europhene. (Di-Isobutyl-Cresol Iodid.)

This is a product similar to thymol iodid. It is a yellow, voluminous powder, containing 28% of iodine and having a faint saffron-like odor. It is insoluble in water or glycerin but readily soluble in alcohol, ether, chloroform and the fixed oils. It is permanent in the dry state, but splits off iodine readily when moistened and rapidly when heated with water at 70° C., particularly in the presence of alkalis. It should not be exposed to heat, light or damp air. It is incompatible with starch, metallic oxides, mercuric salts and alkaline hydrates and carbonates.

Its action is similar to that of iodoform and thymol iodid. It may be given internally in the form of pills in doses of 3 to 5 grains. Locally it is used as a dusting powder in substance or mixed with an equal quantity of finely powdered boric acid, as an ointment with wool-fat, or as a 5% embrocation dissolved in olive oil.

Eusocopol. (172)

This is the trade-mark name for chemically pure scopolamine hydrobromid, which is asserted to be entirely free from related alkaloids and impurities. For the production of scopolamine-morphine narcosis, 0.0012 g. (1/50 grain) of eusocopol and 0.03 g. (1/2 grain) of morphine hydrochlorid are dissolved in 2 cc. of water. Such a solution is now marketed under the name scopomorphine.

Eusemin.

This is a preparation intended for hypodermic use as a dental anesthetic. It consists of a mixture of adrenalin chlorid solution (1:1000), 5, cocaine hydrochlorid, 0.75, in normal salt solution, 100.—Phar. Jour., 1906.

Eusoma. (Echinacea Compound.) (69)

This is stated to be a liquid compound of Echinacea, Thuja and Baptisia. It is recommended as an antiseptic dressing in the treatment of wounds and skin diseases.

Euthymol. (159)

This is an antiseptic liquid which is stated to contain in each fluidounce oil of eucalyptus, 3/8 minim, oil of wintergreen, 9/32 minim, menthol, 5/64 grain, thymol, 15/32 grain, boric acid, 10 15/16 grains, and fluid extract of wild indigo, 1 1/4 minims.

Euthymol Tablets.

These are a combination of oil of eucalyptus, thymol, boric acid, oil of wintergreen, menthol and aromatics, to relieve mouth and throat irritations and purify the breath.

Euzone.

This is a trade name for pure sodium perborate (made by Schering). It is a white, odorless powder, containing about 7% of boron, 15% of sodium, 31% of oxygen, and 46% of water. It represents 22% by weight of hydrogen dioxide. It is soluble in 10 parts of water, such a solution being equal to about a 2% solution of hydrogen dioxide.

The name Euzone is also applied to a preparation made by the Girard Chem. Co. This is an antiseptic and germicide liquid which is stated to contain lignol, eucalyptol, thymol, menthol, sodium bicarbonate and benzoate, oils of wintergreen and peppermint, glycerin and excipients.

Exalgin. (Methylacetanilid.)

This occurs in colorless, acicular crystals, sparingly soluble in water, readily so in alcohol. It is an antipyretic simi-

lar to antipyrine but the dose is smaller. It is prescribed as an antineuralgic in doses of 2 to 8 grains.

Exarysis or Exhaustion Tablets. (160)

These are stated to contain hypophosphites of lime, soda, iron and manganese with quinine and nux vomica, associated with pepsin and pancreatin and made palatable with chocolate and vanilla. They are recommended as a digestive tonic and reconstructive.

Exodin. (178)

This is a mixture of derivatives of rufgallic acid, is therefore an oxyanthraquinone derivative. It is a greenish-yellow, odorless, tasteless powder, insoluble in water and sparingly soluble in alcohol. It is claimed to be a pleasant and reliable cathartic. It is said to produce a mild and protracted tonic effect on the digestive tract and to produce neither gastric pains nor colic. It is claimed to be useful in acute and chronic constipation of the atonic form and also in cases in which regular evacuation of the bowels must be stimulated in consequence of hemorrhoids, etc. The dose for children is $7\frac{1}{2}$ grains, for adults, 15 to 22 grains. This is not to be confounded with exodyne.

Exodyne.

Acetanilidparts 18
Sodium salicylatepart 1
Sodium bicarbonatepart 1
—Goldman's Analysis.

Extract of Leeches.

This is an aqueous extract from the heads of leeches hardened in alcohol, dried and powdered. The buccal secretion of the leech has the power of preventing coagulation of blood and this extract may furnish a means of effectively treating recurring thrombosis.

Extract of Red Bone Marrow. (14)

This is described as a glycerin extract of the red marrow of bones. It contains about 2% of proteids, about 1% of lecithin, and about 85% of glycerin. It is a brownish liquid of an agreeable

aromatic taste. It is recommended for simple and pernicious anemia.

Extract of Suprarenal Capsule.

This is in brown, light particles which form a turbid solution with water. It is used chiefly externally in eye and nose operations, previous to cocaine, in conjunctivitis and other eye diseases, hay fever, capillary hemorrhages, etc. It is applied in 6 to 30% solutions. It is also used intravenously in 1% solution, 1 to 2 fluidrams being injected 2 to 3 times daily if necessary. Solutions should be prepared fresh each time with freshly sterilized water.

Fagacid.

This is a resin-like substance obtained from beech tar. It is a black, glistening mass of tarry odor and taste, fairly soluble in absolute alcohol and in solutions of caustic alkalies and alkaline carbonates, but insoluble in water and weak acids. It is recommended as an internal antiseptic and for the preparation of soaps, plasters, dressings, etc.

Fayard's Paper.

See Papier Fayard.

Febrile-Laxative Tablets. (131)

These are made to contain in each tablet

Quinine sulfategr. 1
Acetanilidgr. 2
Tr. gelsemiumm. 1
Aloingr. $1/20$
Podophyllingr. $1/40$
Capsicumgr. $1/4$

The Febril-Laxative No. 2 contain salamid instead of acetanilid.

Febrisol. (194)

Each 5 grains is stated to represent
Phenacetinegr. 2
Acetanilidgr. $1\frac{1}{4}$
Salolgr. $\frac{1}{2}$
Cit. caffeinegr. $\frac{1}{2}$
Tartaric acid,
Sodium bicarbonate, each..sufficient

This is also put in 5-grain tablets, plain and with quinine.

Febrisol Liquid.

Each fluidram is stated to contain
Phenacetinegr. 2
Acetanilidgr. $1\frac{1}{4}$

Salol	gr. ½
Cit. caffeine	gr. ¼
Tartaric acid,	
Sodium bicarbonate, each..	sufficient

Fehr's Compound Talcum Powder.

According to the patent specifications, this is a mixture of 2,000 parts of magnesium silicate (talcum) and 1 of carbolic acid, to which ½ part of zinc oxid may be added.

Fellows' Compound Syrup of Hypophosphites.

The manufacturers state that it contains potash, lime, iron, manganese, quinine, strychnine and phosphorus, the whole combined in the form of a syrup with a slightly alkaline reaction.

Feralboid. (12)

This is described as a "peptonized albuminate of iron." It is put up in tablets, also in combination with quinine, with quinine and strychnine, and with manganese.

Fercao.

This is a dietetic preparation which is stated to consist of iron saccharate and cacao.

Fermang. (Liq. Ferro et Manganopeptonatus.) (116)

This is described as a combination of peptonized albumen, iron and manganese.

Fernine Tablets.

These are stated to be composed of the active principles of the following drugs, so proportioned that each tablet contains

Polypodium vulgare (female fern)	gr. 2
Viburnum prunifolium.....	gr. 1/10
Helonias dioica.....	gr. ¼
Monotropa uniflora (nest root)	gr. ½
Senecin	gr. ½
Caulophyllin	gr. 1/6

They are recommended as uterine tonics.

Ferrated Gelsemium Compound. (Alterative Tonic.) (192)

Each fluidram is stated to contain gelsemium, 2 grains; arsenous acid,

1/48 grain; perchlorid of iron, ¼ grain, combined with calisaya and aromatics.

Ferratin.

This is an acid albumin with 7% iron. It is a reddish-brown, odorless, tasteless powder, which is soluble in diluted alkalies, insoluble in water or diluted acids. It is claimed to be identical with the form of iron as found in the liver.

It is used as a hematinic in anemia, chlorosis, etc.

Dose: 4 to 8 grains 3 times per day in wafers or with milk, children half as much. It is incompatible with acids.

Ferratogen.

This is an iron nucleinate obtained by growing yeast in a ferruginous medium. It is a yellowish-gray powder, insoluble in water and in acids of the strength of the gastric juice, and for this reason does not produce any gastric disturbance. It is used in chlorosis and anemia in doses of 5 grains 3 times daily.

Ferratose.

This is described as a soluble form of ferratin, containing 3/10% of iron.

Ferrichthol. (Ferric Ichthyol—Iron Sulfichthyolate.)

This is an iron combination of ichthyol containing about 2½% of iron. It is a brown-black, voluminous, non-hydroscopic powder, nearly odorless and tasteless. It is insoluble in the ordinary solvents as well as in diluted acids and alkalies. It is said to be alterative, antiseptic, hematinic and tonic, and is recommended in anemia, chlorosis, etc. The dose is 15 to 30 grains.

Ferrinoids. (63)

This is described as a "neutral solution of the peptonized albuminates of iron and manganese, reinforced with bone marrow." A light brown liquid of palatable taste. It is also put up in an arseniated form, each dessert-spoonful of which contains 1/60 grain each of arsenous acid and strychnia.

Ferrinol. (159)

This is a compound of iron with nucleinic acid, containing about 6% of iron. It is a brown powder, soluble in warm water, from which solutions it is not precipitated by the ordinary iron reagents. It is recommended as a hematinic in anemia, chlorosis, etc.

Ferripyrine.

This is the same as Ferropyrine, which see.

Ferroid. (74)

This is described as a "solution of the citrate of the protoxide of iron in a simple elixir."

Ferrocotin.

This is the name given to a peptonized guaracol-iron-albuminate mixed with thymol in syrup. It is recommended for scrofula, incipient tuberculosis, bronchial catarrh, etc.

Ferrol. (71)

This is stated to be an emulsion of cod liver oil containing 50% of the latter, each fluidounce containing also 6 grains of iron phosphate.

Ferroleum. (197)

This is the formula as given by the manufacturers:

Olei morrhuae (opt.).....	℥vii
Ferri phosphat	℥ii
Phosphori	gr. i
Glycerini, etc., q. s. ad.....	℥xv

Ferro-Mangan Dieterich. (Liquor Ferro-Mangani Peptonati "Dieterich.")

This is a solution of a compound of peptone with iron and manganese, containing 0.6% of iron, 0.1% of manganese, and 1.5% of peptone. It is prepared by covering 40 g. of iron and manganese peptonate "Dieterich" with distilled water for one hour, then heating to boiling with 550 cc. of distilled water and allowing to cool. To this is now added 100 cc. of cognac, 75 cc. of 90% alcohol, 0.25 g. of saccharin, 12.5 cc. of aromatic tincture and distilled water to make 1000 cc.

It is a clear liquid of a dark brown

color and pleasant odor and taste; it is slightly acid in reaction. It is recommended as a reconstructive tonic and hematinic in anemia, chlorosis, convalescence and whenever a general tonic is required. The dose is 1 to 4 fluidrams 3 times a day.

Ferro-Manganese Peptonate. (182a.)

Each fluidounce is stated to represent 1¼ grains of metallic iron and ¾ grain of metallic manganese in the form of neutral peptonized albuminates. It is recommended for anemia, chlorosis, general debility, and convalescence from wasting diseases.

It is also put up with arsenic, each fluidounce containing 1/30 grain of arsenous acid, and with cascara, each fluidounce containing 60 grains of cascara.

Ferropyrine. (Ferripyrine—Antipyrineferri Chlorid.) (109)

This is a compound containing about 64% of antipyrine and 36% of ferric chlorid. It is prepared by mixing solutions of 1 part of crystallized ferric chlorid in 2 parts of 96% alcohol and 1 part of antipyrine in 2 parts of alcohol and 10 parts of ether, washing the precipitate with ether and drying it on porous tiles at 40° C. It is a yellowish-red, crystalline powder, having an acid-astringent taste. It is soluble in 5 parts of cold water, but requires 9 parts of hot water for solution; it is soluble in alcohol but insoluble in ether. It forms a clear blood-red solution in water. It is incompatible with alkalies, their carbonates and bicarbonates.

It is stated to be a hematinic, hemostatic, astringent, analgesic and tonic. The dose is 5 to 15 grains in powder or solution. It is also used in a 1 to 1½% solution as an injection up to 20% solution for hemorrhages.

Ferro-Salicylate.

This is stated to contain in each fluidram, 5 grains of true salicylic acid from oil of wintergreen, and 5 minims of tincture of citro-chlorid of iron in alkaline combination, with a menstruum of glycerin and simple elixir. Elsewhere

it is stated to contain ammonium citrate and to have the odor of wintergreen oil. It is recommended for rheumatic affections where a tonic is also needed.

Ferro-Somatose. (Iron Somatose—Iron Albumose.)

This is a light brown, almost tasteless and odorless, dissolving easily in water and aqueous liquids. It contains 2% of iron in organic combination. It is used as a dietetic and tonic in anemia, chlorosis, convalescence, etc. There is also a Liquid Ferro-Somatose. The objection to ferro-somatose is that although freely soluble, its solution requires some time. The liquid is said to be very palatable and contains no alcohol or other preservative agent.

Ferrostyptin.

This is a combination of hexamethylenetetramine hydrochlorid and ferric chlorid. It is a yellow crystalline powder, easily soluble in water, insoluble in alcohol, ether and chloroform. It is a styptic, like ferric chlorid. It contains 15% of iron. It is used on gauze or cotton.

Ferrum Sanguinis. (204)

This is described as a semi-crystalline powder which forms a clear red solution in water and consists of the coloring matter or hemoglobin of blood. It is marketed in capsules each containing 4 grains.

Fersan.

This is a compound of iron and phosphorus, prepared from the red corpuscles of beef, which are split up into two bodies, one of which is used in this preparation and which has in it all the iron and phosphorus—containing albuminoids of the blood. It is a chocolate-colored powder, of a slightly salty taste, and is soluble in water. It passes through the stomach unaltered, but is completely absorbed by the intestines.

Festoform.

This is a solid formaldehyde which is obtained by mixing 3 parts of a 40% solution of formaldehyde with 1 part of

soda soap, or by passing formaldehyde gas into a solution of soap. It forms a white mass, dissolving in water to make a feebly opalescent neutral liquid which is used for disinfection. It is marketed in tablet or pastille form.

Fetrone.

This is a new ointment vehicle devised by Liebreich. It is a solution of 3% of stearic anilid in yellow petrolatum, stearic anilid being a white crystalline substance made by heating aniline with stearic acid. The mixture is yellowish and inodorous, does not become rancid and at a temperature of 68° C. is capable of absorbing large quantities of water; it may be mixed with a great variety of medicaments without influencing their action or exerting any of its own.

Fibrolysin. (130)

This is a sterilized solution of the double salt of thiosinamine and sodium salicylate, containing 15% of the double salt. It is prepared by mixing the two compounds in aqueous solution. It is an odorless liquid which does not keep when exposed to the air, and hence is marketed in sealed, amber glass vials, each containing 37 minims of the solution (equivalent to 3 grains of thiosinamine). The properties and uses are the same as those of thiosinamine with the advantage of quicker absorption and freedom from pain or irritation, on account of its solubility and aqueous vehicle. The contents of one vial is used by subcutaneous, intramuscular, or intravenous injection once a day or every 2 or 3 days.

Fikulax.

This is the formula as given in the Journal of the American Medical Association:

Pimento	gr.	1½
Oleum cassiæ	drop	¼
Ext. cascariæ sag.	gr.	1/16
Magnesia gravis	gr.	9
Sulfuris	gr.	2
Rhamnus frangula	gr.	1/12
Ext. sennæ fluidum	m.	10
Zingiberis	gr.	4
Cinnamomum	gr.	4

Cardamomumgr. 4
 Myristicagr. 4
 Ext. glycyrrhizæ, q. s.
 Ficus celestia et chocolate, q. s.

Filmaron Oil.

This is a 10% solution of filmaron, the active principle of male fern, in castor oil. It is used for the removal of tape-worms.

Filmogen. (Acetone Collodion—Collosin.)

This is pyroxylin dissolved in acetone with castor oil. It is used as a protective as well as vehicle for remedies to be applied to the skin.

Firollyptol. (194)

This is stated to be composed of

Eucalyptolm. x
 Cottonseed oil, purified.....oz. ss
 Firweinq.s.oz. i

There is also a Firollyptol with Creosote which contains in addition to the above 10 m. of creosote (Morson's). Firollyptol with Hypophosphites contains 5 grains of calcium hypophosphites and 2 grains each of sodium and potassium hypophosphite.

Firwein. (194)

This is described as a balsam of fir wine with iodine, bromine and phosphorus. Each fluidram is stated to contain phosphorus, 1/100 grain, iodine, 1/2 grain, and bromine, 1/2 grain.

Fitch's Kidney and Liver Cooler.

This was found to be a solution of 56 grains of potassium nitrate to the ounce of water.—Analysis in British Med. Journ.

Fitchmul. (Emul. Terebinthina Canadensis Comp.) (72)

This is stated to combine the active principles of fir balsam, Venice turpentine, chloric ether, and a minute quantity of dilute hydrocyanic acid, tartar emetic and aromatics.

Flagg's Relief.

Oil of clove, about.....fl.oz. 2
 Oil of sassafras, about.....fl.oz. 4
 Spirit of camphor, about...fl.oz. 3

—J. J. Pierson, from N. I.

Flavorone. (159)

This is a culture of selected and tested lactic acid germs which is used for the purpose of ripening cream for butter making and as a ferment in the manufacture of cheese. It is put up in the form of a powder contained in gelatin capsules.

Flanders' Diffusible Tonic.

Cinchonine sulfateparts 4
 Extract of golden seal.....part 1
 Alcoholparts 50
 Waterparts 145

—A. B. Stevens (from N. I.)

Flint's Saline and Chalybeate Tonic.

These are pills or tablets made according to Dr. Austin Flint's formula, each pill or tablet containing

Sodium chloridgr. 3
 Sodium carbonategr. 3/5
 Potassium chloridgr. 3/20
 Potassium sulfategr. 1/10
 Potassium carbonategr. 1/20
 Calcium phosphategr. 1/2
 Calcium carbonategr. 1/20
 Magnesium carbonategr. 1/20
 Reduced irongr. 9/20
 Mass of iron carbonate....gr. 1/20

Flon's Lenitive Syrup.

Morphine hydrochlorid.....gr. 18
 Cherry-laurel waterfl.dr. 3
 Tincture of cochineal.....fl.dr. 3
 Simple syrup, to make....fl.oz. 16

—H.

Flora China. (Tasteless Quinine.)

This was found to be upon examination crystallized calcium sulfate.

Floricin.

This is a name applied to an oil obtained from castor oil by a special process. In contrast with castor oil it saponifies readily with dilute solutions of alkali carbonates. The soaps so prepared are adapted for the purpose of rendering certain substances more soluble in water, such as for instance, volatile oils, phenols, resins, etc. The oil itself is a yellowish brown, fluorescent liquid, viscous like castor oil. It mixes freely with petroleum oil and gasoline, is completely insoluble in alcohol and acetic acid, and a large proportion of water may be mixed with it. It has va-

rious uses in the arts and it also serves as an ointment vehicle. On account of the similarity of the name to phloridzin, the pure oil has been named *dericin*.

Fluid Hydrastis. (131)

This preparation is stated to represent the active medicinal constituents of the drug, freed from associated resinous principles. It is non-alcoholic and non-resinous, and mixes with alcohol, glycerin, wine, syrup, or water without precipitation.

Fluid Lightning.

See Cram's Fluid Lightning.

Fluoroform Water.

Fluoroformol.

Fluorol.

This is an aqueous solution of fluoroform, C H F_3 (containing 2.8%); it is said to be virtually odorless, tasteless, non-toxic and non-irritant. It is used in phthisis, tubercular infiltrations, and in local tubercular lesions of the glands, joints or skin (*lupus*). The dose is a tablespoonful 4 times daily.

Fluorol.

This is sodium fluorid which has powerful antiseptic properties. It is soluble in water, and does not coagulate albumen.

Fluorrheumin. (Antirheumatin.)

This is an ointment composed of 1% of fluorphenetol, 4% of difluordiphenyl, 10% of petrolatum, and 85% of lanolin. It is applied externally in acute articular rheumatism, lumbago, sciatica, and similar affections.

Formacoll. (220)

A combination of formaldehyde with gelatin, said to be made according to the formula of Dr. Schleich. It is described as a non-irritant, non-poisonous antiseptic, free from odor. It is recommended for the treatment of purulent ulcers, suffurating wounds and fresh sutures.

Formalbumin. (Formaldehyde - Casein.)

This is a yellowish powder, almost odorless and tasteless. It is insoluble in water. A protective wound antiseptic, forming a film from which the formaldehyde is gradually liberated, thus continually disinfecting the surface of the wound.

Formaldehyde.

This is solution containing about 40% of formaldehyde gas, which is prepared by the reduction of methyl alcohol. The U. S. P. preparation is called "solution of formaldehyde" and contains 37% of the gas. Commercial preparations are known by the names "formalin," "formol," etc. It is an almost ideal disinfectant and deodorant. It is extensively used as a preserving and hardening agent for histological purposes, as an antiseptic in surgery and in all other branches of medicine, particularly in contagious diseases. It is valuable for rendering sweating feet, axillæ, etc., inodorous. It is frequently added to mixtures, pastes, solutions, etc., for purposes of preservation.

Formalin.

Formol.

See Formaldehyde.

Formalin-Gelatin.

See Glutol.

Formamine. (117)

This is the same as hexamethylenamine, which see.

Formamine Compound Tablets.

Each tablet is stated to contain formamine, 2 grains, sodium salicylate, 5 grains, and colchicine, 1/200 grain

Formamint.

This is a combination of formaldehyde and lactose and appears as tablets and powder.

Formane.

This is a combination of menthol, 8 drams, formaldehyde, 5 drams, and oil of rose geranium, 40 drops. It is used by inhalation for cold in the head.

Formasal. (Methylene Disalicylic Acid.) (116)

This is a patented product prepared by the condensation of formaldehyde and salicylic acid. It is a tasteless, cream-white powder, insoluble in water, sparingly soluble in chloroform, and very soluble in ether and alcohol.

It is marketed also in the form of compounds with various bases, such as with potassium (called Kaliformasal), calcium (Calformasal), bismuth (Bisformasal), etc. The alkali salts are recommended in cases of uric acid diathesis in doses of 5 to 15 grains, while the alkaline earth salts are recommended in gastro-intestinal disturbances.

Formaseptol. (117)

This is a liquid antiseptic stated to contain $\frac{1}{2}\%$ of formaldehyde in combination with cinnamol, thymol, eucalyptol, menthol, gaultheria, sodium borate, and benzoic acid.

Formatone. (Solution of Pentaformates.) (221)

This is stated not to contain any sugar. Each fluidounce contains

Sodium formate	gr. 16
Strontium formate	gr. 14
Magnesium formate	gr. 8
Lithium formate	gr. 2
Quinine formate	gr. 2

Formenthol.

This is stated to be an alkaline solution containing thymol, eucalyptol, formaldehyde, "benzo-boric" acid, and red gum.

Formetto Capsules. (117)

Each capsule is stated to contain 2 grains of hexamethylenamine, 6 minims of oleoresin of saw palmetto, 2 minims of oil of sandalwood, and $\frac{1}{4}$ minim each of oils of cinnamon and nutmeg.

Formicine. (Formaldehyde Acetamide.)

This is a very hygroscopic substance and hence is marketed only as a concentrated solution which is a thick, syrupy

liquid of a yellowish color, miscible in all proportions with water, alcohol, or chloroform, readily soluble in glycerin, decomposed readily by acids and alkalis, slowly by water, formaldehyde being liberated. It is used as a disinfectant and deodorant for abscesses, cystitis, purulent wounds; 2% solution is used for injection into the bladder and 5% for abscess cavities.

Formidine. (159)

This is a compound of iodine, formaldehyde and salicylic acid. It is a reddish-yellow powder containing 47% of iodine. It is insoluble in water, acids or alcohol, but readily soluble in alkaline solution. It is perfectly stable in the dry state. It is used as a substitute for iodoform, both internally and externally. On contact with alkaline organic secretions it is slowly dissolved and decomposed into its three original components. The dose internally is 1 to 5 grains.

Formin. (130)

This is the same as hexamethylenamine, which see. Do not confound with formine.

Formine. (77)

This is described as a purified 40% solution of formaldehyde. Do not confound with formin.

Formochlorol, Solidified. (77)

This is a mixture of polymerized formaldehyde (70%) and neutral salts (30%)—kind not stated—which produces formaldehyde when heated in the autoclave.

Formolid. (Wampole's Antiseptic Solution. (211))

Each fluidounce is stated to contain

Acetanilid	gr. 2
Boric acid	2%
Boroglyceride	1%
Sodium benzoate	$\frac{1}{2}\%$
Formaldehyde sol.....	$\frac{1}{4}\%$
Alcohol	15%

Eucalyptol, menthol, thymol, and oil of wintergreen.

Fortoine. (Methylene-Dicotoin.)
(222)

This is a condensation product of co-tin and formaldehyde. It forms yellow, needle-shaped, tasteless crystals, insoluble in water, sparingly soluble in alcohol, ether or benzol, but freely soluble in dilute alkalies, acetone or chloroform. It has an antiputrefactive, bactericidal action, and is recommended as an astringent antiseptic in acute and chronic intestinal catarrh and in the protracted diarrheas of consumptives.

Fosgate's Anodyne Cordial.

According to a communication to the Ch. & Dr., this was first put up as a substitute for Godfrey's Cordial. As originally prepared it was understood to be composed of rhubarb, soda, laudanum and cinnamon. To these were subsequently added, it was said, camphor and capsicum.

N. I. offers the following as a similar preparation:

Fluid extract of rhubarb....	f.dr. 5
Fluid extract of rhatany....	f.dr. 2
Fluid extract of ginger....	drops 6
Paregoric	f.dr. 1
Simple syrup	f.dr. 1
Diluted alcohol	f.dr. 5

Fossilin.

A petroleum product similar to petrolatum.—Coblentz.

Fournier's Wine of Creosote.

Creosote	g. 5
Alcohol	g. 100
Simple syrup	g. 350
Malaga wine	g. 400

—H.

Franck's Grains de Sante.

According to Guibourt, these consist of aloes and licorice extract, according to Hager's analysis, of 1 part of gum gamboge and 4 parts of aloes.

Freligh's Remedy. (219)

Twenty minims of this preparation are stated to contain the equivalents of

Tinct. hyoscyamus nig.....	m. 3
Tinct. colchicum sem.....	m. 1
Tinct. bryonia	m. 1
Tinct. aconite	m. 1
Magendie's sol. morph.....	m. 2
Iodide potass.	gr. ½

and "fractional parts" of apocynum cann., cimicifuga rac., cannabis ind., rhus tox., belladonna, matricaria, gaultheria, and cactus grand.

It is recommended for rheumatism, neuralgia, gout and gravel.

Freligh's Tonic. (Phosphorized Cerebro-Spinant.)

Ten minims are stated to contain the equivalents of

Tinct. nux strychnos.....	m. 1
Tinct. ignatia amara.....	m. 1
Tinct. matricaria	m. 1
Tinct. cinchona	m. 4
Tinct. gentian	m. ½
Tinct. colombo	m. ½
Tinct. phosphorus	gr. 1/200
Aromatics	m. 2

Frey's Vermifuge.

According to a communication to D. C., this is composed of

Castor oil	f.oz. 1
Aromatic syr. rhubarb.....	f.oz. 1
Oil of wormseed.....	drops 30
Croton oil	drops 5

According to the manufacturers, it contains castor oil, oil of wormseed, rhubarb root, senna leaves, cinnamon bark, clove, nutmeg, cardamom and sugar.

Fringe Tree Alternative. (143)

This is stated to contain fringe tree bark, wahoo bark, echinacea root, burdock root, senna leaves, and sodium phosphate.

Fruneau's Antiasthmatic Paper.

According to Hager, this is the same as "paper of potassium nitrate."

Furunculin.

This is the name for a preparation derived from brewer's yeast, and recommended in furunculosis, catarrh of the stomach and intestines, etc. The dose is 10 to 30 grains 3 times daily before meals, with milk or beer.

Gadberry's Mixture.

This is the Splenetic Mixture of the National Formulary.

Gaduol. (Alcoholic Extract of Cod-Liver Oil.)

A brownish-yellow, oily liquid of a bitter, acrid taste derived by alcoholic

extraction of cod-liver oil. It is said to contain traces of iodine, bromine and phosphorus. One part is stated to represent 12 parts of cod-liver oil. It is used for the same purposes as the oil. The dose is 5 to 15 minims in capsules, wine or elixir.

Gaiacophosphal. (Guaiacol Phosphate.)

This is stated to contain 92.2% of guaiacol. It is a white powder, of pungent taste, sparingly soluble in water, more soluble in alcohol, glycerin, chloroform and oils. It is used as an antitubercular in doses of 3 to 15 grains 3 times a day.

Gallanol. (Gallic Acid Anilide—Gallinol.)

This is in gray, bitter crystals or powder. It is slightly soluble in cold water, readily in boiling water and in alcohol and ether, insoluble in chloroform or benzene. It is used as an antiseptic instead of pyrogallol or chrysophanic acid for dermal purposes, as in psoriasis, eczema, etc. Application: 5 to 10 to 25% powder, solution or ointment.

Gallicin. (Methyl Gallate.)

This is in white, fleecy needles, which are soluble in hot water and alcohol, also in ether. It is a reducing agent and anti-catarrhal. It is used in powder form, chiefly in conjunctival catarrh.

Gallobromol. (Dibromogallic Acid.)

This is in small, gray crystals, which are freely soluble in alcohol, ether and boiling water, and soluble in 10 parts of cold water. It is a sedative, like potassium bromide, and an antiseptic astringent, useful in gonorrhea and cystitis.

Dose: Same as of potassium bromide. In gonorrhea and cystitis, it is used in 1 or 2% solution.

Gallogen. (Ellagic or Benzoaric Acid.)

This is the astringent principle of divi-divi, the pods of *Cæsalpina coriari*. It is a yellowish, odorless, tasteless powder, insoluble in all acid and neutral li-

quids, but soluble in alkaline liquids to the amount of 2%, such solutions, however, being very readily oxidized. Its solutions in alkaline media give all the reactions of tannic acid with iron salts, gelatin solution, etc. It is incompatible with alkaline liquids. It is an astringent and antidiarrheic, and is slowly decomposed in the intestinal tract, thus exerting its astringent action gradually during its passage. It has been recommended in dysentery, cholera infantum, diarrhea, and is said to be useful even in those of syphilitic or tuberculous origin. The dose is 5 to 8 grains for children, 10 to 15 grains for adults, suspended in neutral or slightly acid media. **Garantose.**

This is the same as saccharin, which see.

Gardner's Syrup of Hydrodic Acid. (78)

This is stated to contain 1.28% of absolute hydriodic acid (hydrogen iodide) or 6.66 grains of pure iodine in each fluidounce.

Gardner's Syrup of Hypophosphite of Ammonium.

Each fluidounce is stated to contain 16 grains of ammonium hypophosphite.

Gare's Lecithine.

This is defined as "true organic phosphorus (glycerophosphate of choline)," also as "a definite chemical extracted from the yolks of fresh eggs and representing the molecule which contains the phosphorus in the exact form in which it exists in the human organism." It is marketed in the dry, granular form and as a glycerole. The dose of the form is 3 to 5 grains, to be administered in capsules, of the latter $\frac{1}{2}$ to 1 teaspoonful, 3 times a day.

Gasterin.

This is a name applied to the gastric juice of dogs.

Gasterine.

This is a name applied in France to bismuth phosphate.

Gaultherine (formerly called Asep-sin.) (131)

This is the sodium salt of methyl salicylate prepared from natural oil of wintergreen. It is a pinkish powder, slowly soluble in cold water, more readily soluble in hot water, very soluble in alcohol, insoluble in ether and chloroform. It is an antiseptic and antifermentative and is used internally and externally.

Gaulsalol Capsules. (38)

Each capsule is stated to contain 5 grains of salol and 5 minims of methyl salicylate.

Gelanthum.

This is a mixture of 2½% each of gelatin and tragacanth, 5% of glycerin, 2% of thymol as a preservative, and water. It is lauded by Unna as an ideal water-soluble vehicle for the application of medicines for skin medication. It forms a smooth, homogeneous covering without a tendency to stickiness. It takes up 50% of ichthyol, 40% of salicylic acid, resorcin or pyrogallol, 5% of carbolic acid, and 1% of mercuric chlorid.

Gelasepsin.

This is a 1 to 2% sterilized solution of gelatin in physiological salt solution.

Gelatosol.

An ointment vehicle consisting of a mixture of oil, glycerin, gelatin and water.—Helbing's Mat. Med.

Gelatose-Silver.

This is Albargin, which see.

Gelin's Granules of Arseniate of Gold.

These are the same as Addison's Granules of Arseniate of Gold, which see.

Gelis & Conte's Dragees of Lactate of Iron.

According to Hager, these contain each 5 centigrams of lactate of iron.

Gelone.

This is a plaster consisting of two layers, an outer insoluble covering composed of a tough, elastic agar mass, and a layer of adhesive mixture soluble in

water. The latter is a gelatinous substance of great adhesive power, it absorbs water readily, and is suitable to serve as a base for mixtures of various medicinal agents (zinc oxid, salicylic acid, ichthyol, chrysarobin, mercury, galacetophenone, etc.) The plaster is applied by moistening the adhesive surface and pressing gently upon the skin, and is removed with a minimum of irritation to the affected parts by gently sponging the outer layer with water, which causes the tough covering to separate, after which the soluble adhesive mixture may be washed off.

Gelseminine.

This is an alkaloid derived from gelsemium. It is in very small white crystals which are soluble in alcohol and ether. The hydrochlorid and sulfate are used also, both of which are soluble in water.

It is used in rheumatism, neuralgia, and dysmenorrhea, also used as an antidote to strychnine. The dose is 1/125 to 1/30 grain, the maximum single dose being 1/30 grain, the maximum daily dose 1/5 grain.

Genitone. (Elixir Viburnum Prunifolium Compound — Utero-Tonic Cordial.) (131)

Each fluidounce is stated to contain 2 grains of pulsatilla, 4 grains of passiflora, 5 grains each of golden seal and life root, 8 grains of black haw, and aromatics. It is recommended for the functional derangements peculiar to women.

Geoline. (142)

This is described as liquid petrolatum, U. S. P.

George's Pectoral Paste.

Dissolve 5 av. ounces of gum arabic and 3½ av. ounces of sugar in 8 fluid-ounces of water by the aid of a water bath, then add 50 grains of calcined magnesia and 1 grain of morphine hydrochlorid, and enough decoction of licorice root (1 in 4) to make a suitable mass, and divide this into small, rectangular lozenges or into pastilles.—H.

Geosote. (Guaiacol Valerianate.)

This is a yellow, oily liquid which has the characteristic odor of valerianic acid, and is insoluble in water, soluble in alcohol and ether. It is said to be useful in chlorosis and tuberculosis and as an intestinal antiseptic in doses of 3 to 10 grains 3 times a day.

Gerdal.

This is a nutritive compound of beef juice, albumen and sugar. It is a grayish-yellow powder, of pleasant odor and taste which is given in doses of three teaspoonfuls 3 times daily, either alone or mixed with other food.

German Cathartic Salt.

This article is stated to be prepared exactly according to the formula in the German Pharmacopeia for *Sal Therma-rum Carolinensis*.

Germicidal Discs. (McClintock.) (159)

Each disc is stated to contain 3/8 grain of mercuric iodid and 16 grains of sodium bicarbonate.

Germicidal Soap. (McClintock.) (159)

It is a bluish-white powder compressed into cakes, containing 2% of mercuric iodid in combination with hard soap. It is claimed to be a disinfectant which does not coagulate albumin nor corrode steel or nickel. It is recommended for the disinfection of the hands and for washing out infected cavities. There is also a "germicidal soap, mild," and a "germicidal soap, soft," which contain but 1% of mercuric iodid.

Giles' Iodide of Ammonia Liniment.

Alcohol	fl.oz. 8
Iodin	gr. 15
Camphor	dr. 2
Oil of lavender.....	fl.dr. 1
Oil of rosemary.....	fl.dr. 1
Water of ammonia.....	fl.oz. 1
—Kilner.	

This corresponds almost exactly to the liniment of ammonium iodid of the N. F.

Gilt Edge Butter Compound.

This contains 30% of pepsin and 70% of hydrous sodium sulfate, besides a trace of pink coloring matter.—Wiley.

Girard Laxative Pills. (81)

These are silver-coated, ovoid pills, each containing

Leptandrin	gr. 1/8
Cascarin	gr. 1/8
Podophyllin	gr. 1/16
Ext. belladonna leaves.....	gr. 1/16
Strych. sulf.	gr. 1/160
Aromatics and carminatives, q. s.	

Girard Uterine Tonic. (Pil. Caulo-phyllen Comp.)

Stated to contain caulophyllin, scutellarin, and cyripedin.

Glacialin.

This is an English patented article consisting of boric acid, 18 parts, borax, 9 parts, sugar, 6 parts, glycerin, 9 parts, and water, 400 parts.

Glidin. (Dr. Klopfer's Wheat Albumin.)

This contains 96% of albumin and 1% each of salts and lecithin. It forms a fine yellowish, inodorous, tasteless powder that swells up with water and aqueous liquids. It contains no nucleins and the production of uric acid in the system is thus lessened. It is recommended for the baking of bread intended for sufferers from diabetes and kidney diseases.

Glonoin.

This is another name for nitroglycerin, spirit of glonoin therefore being spirit of nitroglycerin, U. S. P. or 1%.

Gluside.

This is a synonym for Saccharin, which see.

Glutannol.

This is a compound of vegetable fibrin and tannin, which is insoluble in water or slightly acid liquids, and is therefore not dissolved in the stomach but is dissolved by the intestinal fluids. It is employed as an intestinal astringent in doses of 8 to 15 grains for adults and 4

to 8 grains for children, either in the form of powder or suspended in mixtures.

Gluten Suppositories.

These consist of cocoa butter containing 10% of wheat flour.—Vulpus, in Ph. Centralh.

Glutiform.

A combination of formaldehyde with gelatin.

Glutol. (Dr. Schleich.) (Formalin-Gelatin.) (178)

This is a chemical combination of gelatin and formaldehyde. It is prepared by dissolving 20 g. of gelatin in 15 g. of water, adding 1 drop of formaldehyde solution, exposing the mass so obtained, in a covered box over lime, to the vapor of formaldehyde by the aid of a layer of cotton wool saturated with it until a dry mass is produced, and reducing this to powder. It is a white, odorless powder, insoluble in water under ordinary conditions, but it is dissolved when heated with water under pressure, the solution thus produced gelatinizing on cooling. It is not changed by acids, alkalies or saline compounds, but is slowly decomposed on contact with living tissue, formaldehyde being slowly liberated. It may be sterilized without decomposition.

It is claimed that while it is in itself non-antiseptic, non-irritant, and non-toxic, it becomes antiseptic and bactericidal on contact with living cells, in consequence of the gradual elimination of formaldehyde. It is used in the undiluted form as an antiseptic dusting powder and is applied to burns, scalds, ulcers, wounds, etc.

Gluton.

This is a form of glucose, made from gelatin, which does not gelatinize and is recommended as a nutriment in cases of obesity and diabetes.

Glycerin Emollient. (159)

This is stated to be a mixture of
 Tragacanthgr. 263
 Boric aciddr. 6

Corn starchoz. 3
 Glycerinoz. 28½
 Oil of wintergreen.....gr. 30

It is a soft and transparent solid, intended as a lubricant in gynecologic and surgical practice. It is put up in collapsible tubes and is to be applied to the dry skin. After use it can be washed off with water.

Glycerinum Pepticum. (70)

This is a concentrated glycerin extract of the peptic juice of the stomach.

Glycerite of Styrolene. (160)

This is stated to contain styrolene, styracin, benzoic acid, cinnamic acid, acetanilid, wild cherry, and glycerin. It is recommended as an antispasmodic, expectorant and antiseptic.

Glycerole of Celery Compound.

This preparation is put up by several firms. As made by Sutliff & Co. and Baker & Co., each fluidram is stated to contain 3 grains each of celery and German chamomile and 5 grains of catnip. As made by Hazen Morse, each fluidram is stated to contain 4 grains of celery seed, 5 grains of catnip, 2 grains of chamomile, and enough anise to flavor. It is recommended as an anodyne and hypnotic, instead of opium, or when the latter cannot be used, as for teething infants.

Glycerole Heroin Compound. (159)

Each fluidounce is stated to contain ½ grain of heroin, 24 grains of ammonium hypophosphite, 8 grains of henbane, 28 grains of white pine bark, and tolu balsam, glycerin and aromatics, q. s.

Glycerole of Lecithin.

See Lecithin Glycerole and Gare's Lecithine.

Glycerole of Lecithine, Gare's.

See Gare's Lecithine.

Glycerole Pepsin and Wafer Ash. (159)

This is stated to contain 40 grains of saccharated pepsin and 30 grains of wafer ash to each fluidounce.

Glycerole Yerbine Compound. (159)

Each fluidounce is stated to represent

Yerba santa	gr. 90
Licorice root	gr. 90
Grindelia	gr. 30
Wild cherry	gr. 30
Potassium bromid	gr. $7\frac{1}{2}$
Pine tar	gr. $2\frac{3}{4}$
Salicylic acid	gr. 2

It is a sedative expectorant.

Glycerophosphates.

These are the salts of glycerophosphoric acid. The calcium compound has already been described (see Calcium Glycerophosphate). It is prepared by heating glycerin and phosphoric acid for a considerable time and then neutralizing with lime. The precipitated calcium phosphate is removed while the calcium glycerophosphate remains in solution. From the calcium salt the other salts can be prepared by precipitating calcium by the appropriate salt of the metal whose glycerophosphate is desired. Potassium and sodium glycerophosphates are in the form of dense, syrupy liquids which are exceedingly soluble in water and representing 75% of the respective salts in a dry condition. Calcium, iron, lithium, magnesium, and manganese glycerophosphates are pulverulent salts, moderately soluble in water. The aqueous solutions of glycerophosphates decompose in a short time. They should be made with sterilized water, but hot liquids should not be used.

These salts were introduced as "nerve foods" and tonics on the theory that their phosphorus, being a step nearer lecithin, is assimilated more readily than the hypophosphites. The potassium and sodium salts may be given hypodermically in doses of 3 to 4 grains in normal salt solution, or per mouth in doses of 4 to 10 grains in water or syrup. Calcium, iron, lithium, magnesium and manganese glycerophosphates are given in doses of 10 grains each; the quinine salt in doses of $1\frac{1}{2}$ to 5 grains; and the strychnine salt in doses of $1/60$ to $1/20$ grain.

Glycerophosphates Comp. (221)

Each fluidounce is stated to contain

Sodium glycerophosphate...	gr. 16
Calcium glycerophosphate..	gr. 8
Iron glycerophosphate	gr. $1\frac{1}{2}$
Manganese glycerophosphate	gr. 1
Quinine glycerophosphate ..	gr. $1/2$
Strychnine glycerophosphate	gr. $1/16$

It is stated not to contain any sugar.

Glycerophosphates Syrup. (116)

This is stated to contain the glycerophosphates of iron, manganese, quinine, strychnine, calcium, sodium, and potassium.

Glycerophosphates Syrup and Tablets (Huxley)—(Ner-Vigor.)

Each fluidram of the "syrup" (free from sugar) and each tablet represents 4 grains of glycerophosphates of lime, soda, potash, manganese and iron with $1/250$ grain of strychnine.

Glycerophosphoids. (89)

These are soft capsules each said to contain

Calcium glycerophosphates..	gr. 3
Gaduol	m. 5
Creosote	m. 2
Strychnine phosphate	gr. $1/60$

Glyco-Chlorides. (214)

Each fluidram is stated to contain

Mercury bichlorid	gr. $1/80$
Arsenic chlorid	gr. $1/49$
Tr. iron chlorid	m. 4
Dil. hydrochloric acid.....	m. 5
Glycerin.	

Glycogen. (204)

This is a substance produced by the digestion of starch and exists in the liver of animals and in some low forms of plant life. It forms a yellowish-white powder, soluble in water. It has been recommended by French physicians in tuberculosis, diabetes, neurasthenia, etc. It is put up in 1-grain capsules, 1 to 5 of which are to be given daily.

Glycoline. (Mineral Glycerin.)

This is a colorless and odorless liquid petrolatum, according to the manufacturers' statement.

Glycomorrhum.

This is a proprietary cod-liver oil substitute which has been introduced into Paris hospitals. It consists principally of glycerophosphates and hypophosphites with some of the constituents of cod-liver oil.

Glycones. (117)

This is a name for glycerin suppositories.

Glyconin.

This is the glycerite of yolk of egg of the U. S. P.

Glycosal. (Glycerin-Salicylate.)

This forms a white powder readily soluble in alcohol, soluble in 100 parts of water. It is employed in place of sodium salicylate.

Glyco-Thymoline. (Kress.)

According to labels formerly used, each fluidounce was stated to contain (in grains?) sodium 24, boric acid 4, benzoin 4, salicylic acid 0.33, eucalyptol 0.33, "thymoline" 0.17, betula lenta 0.08, menthol 0.08, pinus pumilio 0.17, glycerin and solvents sufficient.

Glycotine Comp. (63)

Each two teaspoonfuls is stated to contain 4 grains of the combined glycerophosphates of lime, soda, iron and manganese, with 1/80 grain of strychnine glycerophosphate.

Glycotone Comp. Capsules.

Each capsule is stated to represent two teaspoonfuls of Glycotone Comp., which see.

Glyco-Vitæ. (Glycerole of Glycerophosphates Comp.) (154)

The composition is stated to be 8 grains of sodium glycerophosphate and 4 grains of calcium glycerophosphate combined in a bland, neutral aromatized vehicle.

Glykaolin. (Pasta Alumini Silicatis Comp.) (221)

This is described as a compound of aluminum silicate, salol and glycerin, made into a smooth paste which is recommended as a depletive in local congestion and inflammation.

Picrated Glykaolin is the same with a small amount of picric acid and is especially recommended for burns.

Glymol. (7)

This is claimed to be a liquid hydrocarbon obtained from petroleum, probably therefore a purified liquid petrolatum.

Glyphocal. (185)

This syrup stated to contain the glycerophosphates of calcium, sodium, potassium, magnesium and iron, with pepsin and diastase.

Godfrey's Cordial.

This preparation is now recognized by the N. F. under the name Mixture of Sassafras and Opium.

Gold Monobromid. (Aurous Bromid.)

This is in yellowish-gray, friable masses, insoluble in water.

It is used as an anti-epileptic and against migraine. The dose as an anti-epileptic is 1/10 to 1/5 grain 2 or 3 times daily in pills, as an anodyne, 1/20 grain twice daily.

Gonosan. (172)

This is a solution of the resins of kava kava in oil of sandalwood. It is a yellowish-green aromatic fluid which is put up in 5-grain capsules containing 1 grain of the former and 4 grains of the latter. It is used for gonorrhea.

Good Samaritan Oil.

This was patented in 1872, the composition being

Oil of origanum.....	fl.oz. 1
Oil of hemlock.....	fl.oz. 1
Oil of cedar.....	fl.oz. 1
Oil of sassafras.....	fl.oz. 1
Oil of wintergreen.....	fl.oz. 1
Oil of valerian.....	fl.oz. 2
Olive oil	fl.oz. 2
Tincture of myrrh.....	fl.oz. 2
Tincture of capsicum.....	fl.oz. 2
Ammonia water	fl.oz. 2
Laudanum	fl.oz. 1
Ether	fl.oz. 1
Gum camphor	oz. 1 1/2
Alcohol	oz. 32

Gorite. (Calcium Peroxid.)

This is a yellow powder, slightly soluble in water with the evolution of oxy-

gen. It has been recommended as an antacid and disinfectant in acid dyspepsia and summer diarrhea of children, in doses of 3 to 10 grains. It is also used in tooth powders.

Goss' Improved Laxative Pills.

Each pill contains

Euonymin	gr. $\frac{1}{4}$
Podophyllin	gr. $\frac{1}{4}$
Extract of henbane.....	gr. $\frac{1}{4}$
Comp. ext. colocynth.....	gr. $\frac{1}{4}$
Extract of butternut.....	gr. $\frac{1}{2}$
Ext. black Indian hemp.....	gr. $\frac{1}{2}$
Ext. cascara sagrada.....	gr. $\frac{1}{2}$

Goudrogenin.

This is a dry preparation of pine tar which is in the form of brown scales which is readily soluble in water. The solution is said to possess all the properties of tar water and to be strongly antiseptic.

Gouraud's Oriental Cream.

This is said by Tuttle and Snow to consist of calomel and water, about 39 grains of the former to 1 fluidounce of the latter, no perfume or glycerin being present.—N. I.

The claim of the manufacturer is that the principal ingredients are epsom salt and table salt.

Gouttine.

This is another and later name for citarin, which see.

Grain's de Sante.

See Franck's Grains de Sante.

Graminin.

This is a dry form of hay fever serum intended for use as a snuff in hay fever.

Grapiol. (84)

Described as 5-minim capsule containing apiol, ergot and aloin, and recommended for various menstrual disorders.

Gray's Specific Pills.

Nearly all of these "specific" pills are composed (W. D.) of asafetida, with a little camphor and sometimes hops, or lupulin, *e. g.*:

Asafetida	gr 2
Camphor	gr. 1
Lupulin	gr. $\frac{1}{8}$

The "specific action" is in the direction of an anaphrodisiac.

Green Mountain Kidney Cure.

This is stated to contain Canada balsam (balsam of fir), fresh extract of sweet elder bark, fresh extract of spike-nard root, fresh extract of sumac, podophyllin and ipecacuanha.

Green Mountain Oil.

Oil of eucalyptus.....	m. 10
Oil of spearmint.....	m. 10
Oil of cassia.....	m. 20
Oil of peppermint.....	fl.oz. $1\frac{1}{2}$
Oil of wintergreen.....	fl.oz. 2
Oil of sassafras.....	fl.oz. 3
Oil of sesame.....	fl.oz. 16
Menthol	gr. 30
Chlorophyll	gr. 30

Mix all of the oils except the sesame and add the menthol. Dissolve the chlorophyll in 4 ounces of sesame oil by the aid of heat, mix the two solutions, and add the remainder of the oil of sesame.—Era, 1905.

Green Mountain Salve.

Resin	av.lb. 5
Burgundy pitch	av.oz. 4
Beeswax	av.oz. 4
Mutton tallow	av.oz. 4
Oil of hemlock.....	fl.oz. 1
Balsam of fir.....	fl.oz. 1
Oil of origanum.....	fl.oz. 1
Oil of red cedar.....	fl.oz. 1
Venice turpentine	fl.oz. 1
Oil of wormwood.....	fl.oz. $\frac{1}{2}$
Verdigris, very finely pulverized	av.oz. 1

Melt the first three articles together and add the oils, having rubbed the verdigris up with a little of the oils and put in with the other articles, stirring well; then pour into cold water and work as wax until cool enough to roll.—A. D.

Greenhow's Cholera Mixture.

Guaiaic	av.oz. 1
Clove	av.oz. 1
Cinnamon	av.oz. 1
Brandy	fl.oz. 29

Macerate the drugs in moderately fine powder with the brandy for 7 days, and filter.

Griffith's Compound Mixture of Guaiac, Stillingia, Etc.

This is stated to contain guaiac, stillingia, prickly ash, turkey corn, colchicum, black cohosh, sarsaparilla, salicylates of the alkalies, potassium iodid, and other remedies.

Grillon's Tamar Indien.

See Tamar Indien.

Grimault's Matico Injection.

Made by dissolving 8 grains of copper sulfate in 16 fluidounces of infusion of matico, the latter being prepared from 1 ounce of leaves.—Wittstein's Analysis.

Grimault's Paullinia Powders.

According to Hager, these are put up in boxes of 12 powders, each weighing about 25 grains, containing powdered guarana with possibly some unroasted cocoa.

Grimault's Syrup of Bark and Iron.

This is similar to a solution of 10 grams each of iron and sodium pyrophosphates in 500 grams of simple syrup to which 50 grams of tincture of red cinchona has been added.—Hager.

Griserin.

This consists of loretin combined with 4¼% of sodium carbonate or 6¾% of sodium bicarbonate. It is advertised as being a non-toxic specific in tuberculosis, cancer, syphilis, etc. It is put up in powders or cachets, or in cachets with tannalbin.

Guacamphol. (Guaiacol Camphorate.)

This is a combination of guaiacol and camphor. It is in white odorless, tasteless needles, insoluble in water, moderately soluble in alcohol or chloroform. It is used to stop the night sweats and diarrheas of phthisical patients. The dose is 3 to 15 grains.

Guaethol. (Pyrocatechinmonoethyl ether — Ethyl-Guaiacol — Ajacol-Thanatol.)

This is an oily liquid, solidifying in the cold and forming crystals which begin to melt at about 26° C. It is the

ethyl compound corresponding to guaiacol, which is the methyl compound.

It is said to act more effectively than guaiacol. A single dose is 2 to 4 grains, the daily dose, 16 grains. It is also applied externally.

Guaiacetin. (Sodium Pyrocatechin-Monacetate.)

This is a white, odorless powder, soluble in 30 parts of water. It is used as a substitute for guaiacol and creosote in tuberculosis. The dose is 8 grains. It is marketed in the form of powder and tablets.

Guaiacol. (Methyl-Pyrocatechin.)

This is a colorless crystalline solid melting at 83° C., or as an almost colorless, refractive liquid boiling at 205° C. The specific gravity of the liquid is 1.14. It is soluble in 53 parts of water, in all proportions of alcohol and ether, also soluble in acetic acid and in an equal part of glycerin. It is used internally as an antitubercular and externally as an analgesic. The average dose is 8 minims.

Guaiacol Albuminate.

See Histosan.

Guaiacol Camphorate.

See Guacamphol.

Guaiacol Carbonate.

See Duotal.

Guaiacol Carbonate Comp. (141)

This is put up in capsules, each one of which is stated to contain

Guaiacol carbonate	gr. 1½
Calcium hypophosphite	gr. ½
Ichthyol	gr. ½
Strontium arsenite	gr. 1/120
Olive oil, to make.....	m. 5

It is recommended for incipient tuberculosis, chronic pneumonia and allied affections.

Guaiacol Cinnamate.

See Styracol.

Guaiacol Co. Elixir.

See Triacol.

Guaiacol-Ethylene. (Ethylene Ether of Guaiacol.)

This is in colorless needles, which are sparingly soluble in water but are readily soluble in alcohol. It is an antitubercular, like guaiacol.

Dose: 8 to 15 grains twice daily, in pill or cachet.

Guaiacol Phosphite. (Guaiacol-Phosphal.)

See Gaiaacophosphol.

Guaiacol-Piperidin.

See Guaiaperol.

Guaiacol Salicylate.

See Guaiacol-Salol.

Guaiacol-Salol. (Guaiacol Salicylate.)

This is the salicylic ester of guaiacol and is the analogue of salol as the salicylic ester of phenol. It is a white, crystalline, tasteless powder, of a salol-like odor. It is insoluble in water but soluble in alcohol, ether and chloroform. It is decomposed by alkalis and alkaline carbonates and strong acids. This compound acts like its constituents, being antiseptic and antirheumatic. It is recommended in phthisical diarrhea, dysentery, rheumatism, etc., the dose being 15 grains.

Guaiacol-Somatose.

This is a somatose preparation containing 5% of calcium guaiacol-sulfonate.

Guaiacol Valerianate or Valerate.

See Geosote.

Guaiacoline.

This is stated by the manufacturers to be an emulsion containing the medicinal properties of cod-liver oil, guaiacol and alkaline phosphates, the formula being given as follows:

Pure Norwegian oil.....	drops 60
Guaiacol	drops 2
Prunus serotina, fl. ext.....	drops 15
Alkaline phosphates	gr. 2

Just what relation the above ingredients bear to the total quantity of emulsion, the manufacturers fail to state.

Guaiacyl. (Calcium Guaiacol-Sulfonate.)

This is a bluish gray or yellowish gray, odorless powder, of an astringent-sweetish taste. It is soluble in water and alcohol but not in fatty oils. It is used hypodermically as a local anesthetic in minor and dental surgery in the form of 5% aqueous solution, of which 8 to 24 minims are injected at one time.

Guaiacform. (Diguaiacolmethylen.)

This is a combination of guaiacol and formaldehyde. It is a yellowish, almost odorless and tasteless powder, is insoluble in water but soluble in alcohol and strong alkaline solutions. It is recommended for tuberculosis in the same doses as guaiacol.

Guaialin. (116)

This is described as the benzoic acid ester of methylene-diguaiacol, obtained by passing formic aldehyde gas through a mixed and heated solution of benzoic acid, guaiacol and phosphorus oxychlorid. It is a pea-green colored amorphous powder, which is stated to contain over 60% of guaiacol, 30% of benzoic acid and about 7% of formic aldehyde. It possesses the antitubercular, antipyretic and alterative tonic properties of guaiacol, plus the virtues of its other constituents.

Guaiamar. (Guaiacolglycerylester.) (122)

This is the monoguaiacol ester of glycerin. It is a white, crystalline, non-hygroscopic powder of a bitter and aromatic taste. It is soluble in 20 parts of cold water but very soluble in warm water. It is soluble in alcohol, ether, chloroform and glycerin. It is decomposed by soluble hydrates and carbonates and by strong acids.

When ingested, it is decomposed in the stomach and intestines with the liberation of guaiacol, and in this wise exerts an antiseptic action. It is recommended as a substitute for guaiacol in all cases where the latter is indicated. In

the form of ointment it has been recommended for acute articular rheumatism. The dose is 5 to 25 grains in capsules or dissolved in warm water. Locally it is used in the form of a 25% ointment with wool fat or with belladonna, zinc or mercurial ointment.

Guaiaperol. (Guaiacol-Piperidine.)

This is in colorless crystals soluble in water. It is used mostly in tuberculosis in doses of about 10 grains twice daily.

Guaiquin. (Quinine Guaiacol-Bisulfonate.) (121)

This compound contains both guaiacol and quinine. Quinine alkaloid is present to the extent of 62%, 38% being guaiacol-sulfonic acid, which is equivalent to 24% of pure guaiacol. It is a yellowish, crystalline, hygroscopic powder, very soluble in water, alcohol and dilute acids. It is odorless, has a bitter taste, but not the caustic taste or effects of guaiacol.

It is recommended as an antipyretic and antitubercular in doses of 2 to 10 grains.

Guaiasanol. (Guajasanol.)

This is the hydrochlorid of diethyl glycol-guaiacol. It is small, colorless, prismatic crystals, having a slight odor of guaiacol and a bitter saline taste. It is soluble in its own weight of water and in 25 parts of alcohol, but insoluble in ether. The aqueous solution should be clear and colorless and give a white precipitate with silver nitrate. It is an antiseptic and antitubercular. It is readily absorbed in the system, guaiacol being liberated. It has been recommended for the treatment of tuberculosis, both internally and subcutaneously. It is also recommended as a deodorant and has been used in putrid cystitis. The dose is 15 to 45 grains. Subcutaneously it has been used in amounts of 45 to 60 grains in aqueous solution. Externally it is employed in 1/10 to 2% solutions.

Guaisotol. (57)

This is a syrup, each fluidounce of which is stated to contain 16 grains of guaiacol.

Guaiatonic. (181)

This is described as a palatable preparation of guaiacol and creosote with quinine, strychnine and hypophosphites, each fluidram containing 1 minim each of guaiacol and creosote, both as soluble sulfonates, 7/128 grain of quinine, 1/256 grain of strychnine hypophosphite, combined with hypophosphites of iron, calcium, manganese and potassium in aromatic sweet solution.

Guatannol. (Guatannin.)

This is a combination of guaiacol, tannin and cinnamic acid. It is marketed in the form of 1-grain pills, which are recommended for tuberculosis, glandular enlargements, etc.

Guayarsin.

This is described as a non-toxic guaiacol-arsenic compound, each 10 grams of syrup containing .005 gram of organically combined arsenic and 0.2 gram of guaiacol with cinnamic acid and calcium chlorhydrophosphate.

Guilliermond's Sirop Iodotannique.

Extract of rhatany.....g.	1
Tincture of iodine.....g.	2
Simple syrup	100

Dissolve the extract in the syrup and add the tincture.

This preparation is cloudy. If a clear syrup is wanted, dissolve the extract first in a little water, filter the solution, then add the syrup and the tincture.—Hager.

Guindre's Sal Aperiens.

Sodium sulfate, dried.....av.oz.	2
Potassium nitrate	18 gr.
Tartar emetic	1 gr.

—Hager.

Gunther's Sedative Pills.

According to Parson in Hager, these are composed essentially of

Asafetida	50 parts
Extract of valerian.....	50 parts
Extract of belladonna.....	3 parts
Castor	2 parts
Zinc oxid	1 part

Each pill weighs 1½ grains.

Gunmin.

This is a name applied to a serum intended for the cure of glanders in horses.

Gynecol Ointment. (94)

This is stated to contain *Hamamelis virginica*, *Verbascum thapsus*, *Calendula officinalis*, *Quercus rubra*, aluminum sulfate, oil of peppermint, and petrolatum.

H. H. H. Medicine.

The claim of the manufacturers is that this is made of oils of origanum, cedar and hemlock, camphor, iodine, white castile soap, ammonia, and sufficient grain alcohol to hold the oils in solution, no oil of mustard or turpentine being used.

Haarlem Oil.

The following formula for the preparation of Haarlem oil is published by the Dutch Society for the Advancement of Pharmacy:

Sulfurated linseed oil.....part 1

Rectified oil of turpentine...parts 2

Mix and filter. The product is a bright, red-brown, oily liquid.

It is not intended that this shall be sold as a substitute for the imported Haarlem Oil.

The same society gives the following directions for making the sulfurated linseed oil (also called balsam of sulfur):

Linseed oilpart 1

Washed sulfurparts 2

Mix and heat them together in a porcelain capsule at a temperature between 120 and 130° C., under constant stirring, until the sulfur dissolves. It produces a dark-brown liquid, having a yellow color in thin layers, and completely soluble in oil of turpentine.

Haas' Hog Cholera Remedy.

According to a report of the U. S. Dept. of Agriculture, the following is probably the composition of this remedy:

Powdered soapparts 10

Potassium carbonateparts 5

Red ochreparts 12

Chalkparts 50

Quicklimeparts 10

Calcined magnesiasparts 13

Hæman.

This is a liquid peptonized iron sulfo-cyanid. In anemia and gout, the sulfo-cyanids almost totally disappear, and as these possess bactericidal properties, the use of this preparation was suggested.

Hæmatogen, Hommel's.

This is described as a purified and concentrated hemoglobin, flavored with chemically pure glycerin and malaga wine in the proportion of 4 ounces of glycerin and 2 ounces of wine to each pint.

Haemoantitoxin.

This is a preparation of Maragliano's tuberculosis antitoxin in combination with alcohol and glycerin, flavored with aromatics. It forms a clear solution of a wine red color of agreeable taste. It is given as a prophylactic against tuberculosis in tablespoonful doses four times a day before eating. It is made at the Laboratory of the Institute for Infectious Diseases, Genoa, Italy.

Hæmo-Cardiacin. (17)

This is stated to be composed of "nitrogenized iron, 12 fluidounces, fluid extract of cherry bark (detan.), 4 fluidounces, fluid extract of digitalis, 2 fluid-drams.

Hæmoferum. (Liquid Oxyhemoglobin.) (187)

This is a preparation of purified blood said to contain in each fluidounce 32 grains of oxyhemoglobin in a menstruum containing 12¾% of alcohol. It is prepared from purified blood and the amount of hemoglobin is determined by assay. It is a dark blood-red liquid, of a pleasant odor and taste. It is used in anemia, chlorosis, convalescence, etc., in doses of 1 to 2 teaspoonfuls 3 or 4 times a day. This is the liquid form, but it is also put up in the pill form, each pill containing 3 grains of hæmoferum.

Hæmoform.

This is another blood preparation which appears as a reddish-brown powder, completely soluble in water to form a clear brownish solution.

Hæmoglobin. (36)

This is described as a solution of hemoglobin in serum albumen.

It is also put up in combination with digitalis (containing 1 minim of fluid extract of digitalis to the fluidram), with cactus (containing 3 minims of tincture of cactus grandiflorus to the fluidram), and with strychnine (containing 1/100 grain of strychnine sulfate to the fluidram). The preparation of hemoglobin with arsenic is now called "normalin," which see.

It should also be remembered the name hemoglobin is also applied to the chief constituent of the blood which is marketed as a reddish black powder which is soluble in water. It is given as a hematinic.

Hæmoglobogen. (143)

This is described as "a ferruginous tonic which combines the characters of a predigested nitrogenous food with those of a restorative tonic." It is prepared plain, with arsenic (each fluidounce contains 1/20 grain of arsenic trioxid), and with arsenic and strychnine (each fluidounce containing 1/20 grain of arsenic trioxid and 1/40 grain of strychnine citrate.)

Hæmol.

See Hemol.

Hæmolin.

This is a name given to a mixture of hemoglobin and maltose.

Haemo-Neuralin. (17)

This is described as "nitrogenized iron" and soda with hypophosphites.

Haemo-Mangan. (143)

Each fluidounce stated to contain 10 grains of iron "citro-peptonate" and 2 grains of manganese "citro-peptonate" in combination with wine. This is also put up with arsenic each fluidram containing 1/30 grain of arsenic trioxid.

Hæmoprotagon. (Hæmatoprotagon.)

This is a hæmolecithin, containing iron and phosphorus in organic combination, and said to be prepared from nerve

substance and hemoglobin. It is put up only in tablet form.

Hæmostasin.

This is the name applied to a substance obtained from the suprarenal gland of the sheep, evidently a preparation of suprarenal alkaloid. It is marketed in the form of powder and as a 1:1000 solution.

Hæmostatin.

This is tribromphenol-bismuth of lower bismuth content than xeroform. It is used as a hemostatic. Do not confound with hemostatin.

Hæmostyptic.

As made by Brunninghausen's process this is a preparation containing the active principles of ergot and golden seal. It is recommended in doses of 30 drops 4 times a day.

Hagan's Magnolia Balm.

According to various analyses this contains zinc oxid, glycerin, water and perfume.

Hagee's Cordial of the Extract of Cod Liver Oil Compound. (104)

This is stated to represent in each fluidounce 1/3 fluidounce of cod-liver oil (the fatty portion being eliminated), 6 grains of calcium hypophosphite, 3 grains of sodium hypophosphite, 1/16 grain of saccharin, 1/2 grain of salicylic acid (from oil of wintergreen), and aromatics.

Haggard's Stool Promoter.

Buckthorn, coarse powder...	gr. 150
Potassium carbonate.....	gr. 45
Sodium sulfate, crystal.....	gr. 22
Sodium chlorid.....	gr. 22
Oil of anise.....	drops 5
Alcohol	fl.oz. 2
Water	fl.oz. 6 1/2
Glycerin, to make.....	fl.oz. 16

Mix all but the glycerin, macerate for a day or so, agitating occasionally, filter, and to the filtrate add the glycerin.—Hager.

Hall's Hair Renewer.

This is the revised formula according to the manufacturers: Alcohol,

15%; sulphur, bay rum, glycerin, capsicum, rosemary leaves, boroglycerin, tea, perfume and water.

Halogens Compound Elixir.

See Elixir Halogens Compound.

Hamburg Plaster.

Dieterich's Manual gives the following:

Mother plaster.....	av.oz.	8
Suet	av.oz.	$\frac{1}{2}$
Black pitch.....	av.oz.	$\frac{1}{2}$
Amber, powder.....	av.oz.	1
Peru balsam.....	gr.	45

Melt the first three ingredients, add the amber and balsam, and roll into sticks about $\frac{5}{8}$ -inch in diameter.

Hampton's (Sir John) Vital Restorative.

This was examined by the chemists of the U. S. Department of Agriculture. The first part of the medicine consisted of one pill of methylene blue. This pill when taken will cause the patient's urine to turn green. This naturally would frighten him so that he would consult with the party who supplied the remedy. The second part of the remedy consisted of pills composed of licorice and saw palmetto.

Hardy's Ointment.

Beef tallow.....	av.oz.	1
Castor oil.....	gr.	154
Gallic acid.....	gr.	13
Vanilla tincture....	enough to flavor	

—Bouchardat.

Hartman's Crimson Salt.

Borax	part	1
Potassium permanganate....	part	1
Salt (common).....	parts	6
Alum	parts	8

—Frerksen.

Dr. Haskell's Enteritis Tablets.

Each tablet is stated to contain		
Copper arsenite.....	gr.	1/100
Corrosive sublimate.....	gr.	1/100
Morphine sulfate.....	gr.	1/100

Hayden's Uric Solvent.

See Uric Solvent.

Hayden's Viburnum Compound.

This was stated by the manufacturers to contain the active principles of viburnum opulus, dioscorea villosa, scu-

tellaria lateriflora, and a combination of aromatics.

Hayes' Acid Hypophosphites. (95)

This is described as an acid solution of the hypophosphites of calcium, potassium, sodium, iron, manganese, quinine and strychnine with hypophosphorous acid.

Hazeline.

This is stated to be an alcoholic distillate from witch-hazel bark.

Headine.

Acetanilid	68.7%
Sodium bicarbonate.....	31.3%

—Dr. Schneider's analysis.

Hecto Pepsin. (133)

This is described as a highly concentrated pepsin liquid form for the ready manufacture of wines, elixirs, and other liquid preparations of pepsin.

Hedonal.

This is a urethane differing from ethyl carbonate U. S. P. in that the ethyl radicle has been replaced by the radicle methylpropylcarbinol. It is a white, crystalline powder, of a faint, aromatic odor and taste, soluble in 120 parts of water at 37° C., more soluble at higher temperatures, also readily soluble in alcohol, ether, chloroform and other organic solvents. It is incompatible with alkalis and their carbonates and bicarbonate. It appears to have greater hypnotic power than urethane. It is said not to be followed by bad after-effects, and is recommended in insomnia due to mental overwork or nervous excitement occurring in neurasthenia or hysteria. The dose is 15 to 30 grains, administered dry, followed by a swallow of water, or in wafers or capsules.

Helcosol. (Bismuth Pyrogallate.)

A yellow, amorphous, odorless, tasteless powder containing 48% bismuth oxid. It is insoluble in water and alcohol, slightly soluble in diluted hydrochloric acid; an internal and external antiseptic like salol or dermatol. Dose: 5 to 15 grains in powders or capsules.

Helfin. (96)

These are vermifuge capsules consisting of 1 part of oleoresin of male fern and 2 parts of castor oil. These are accompanied by other capsules containing 3 grains of a mixture of 10% of oil of turpentine and 90% castor oil.

Helenin. (Alantol — Elecampane or Inula Camphor.)

This is in white, acicular crystals, insoluble in water, readily soluble in hot alcohol, ether and oils. It is used as an anticatarrhal, in chronic bronchitis, phthisis, coughs with pain, etc., and as an antiseptic in diphtheria, etc.

Dose: $\frac{1}{8}$ grain 10 times daily, in pills.

Helgotan Bromate.

This is a brom-tannin-methylene compound containing 20% of bromin. It is a yellowish-brown, odorless and tasteless powder which is used in the same way as bromocoll.

Helmbold's Extract Buchu.

The following was given as an authentic formula by Dr. F. E. Stewart in D. C.:

Buchu	av.oz.	1
Cubebs	gr.	180
Digitalis	gr.	50
Alcohol	fl.oz.	$2\frac{1}{2}$
Water, to make.....	fl.oz.	15
Licorice	gr.	50
Caramel	gr.	75
Essence of peppermint....	drops	38
Molasses	fl.dr.	$5\frac{1}{2}$

Helmitol. (Hexamethylenamine Methylenecitrate.)

This is a white crystalline powder melting with decomposition at about 165° C., and of an agreeable acidulous taste and acid reaction. It is soluble in about 10 parts of water but almost insoluble in alcohol and ether. Acids and alkalis decompose it with the liberation of formaldehyde. It is a urinary antiseptic and germicide which is claimed to be more prompt and energetic in its action than hexamethylenamine, acting equally well whether the urine be acid or alkaline. It is recommended in cystitis, pyelitis, urethritis, phospho-

turia, also as an urinary antiseptic in typhoid and in the latter stages and chronic forms of gonorrhea. The dose is 10 to 15 grains.

Helonia Tablets. (146)

Each tablet is stated to contain

Extract of opium.....	gr.	$\frac{1}{4}$
Extract of helonias.....	gr.	$\frac{1}{2}$
Extract of henbane.....	gr.	1
Salicylic acid.....	gr.	1
Tannic acid.....	gr.	2
Boric acid.....	gr.	3

With thymol, eucalyptol and alum.

They are recommended for leucorrhea.

Helonias Cordial. (131)

Each fluidounce is stated to contain the active principles of 15 grains each of helonias, cramp bark, and blue colosh, and 60 grains of mitchella. It is recommended for various female diseases.

Helthin. (178)

This is a substance used for testing drinking water.

Hemoboloids. (158)

Each tablespoonful is stated to represent

Nucleo-proteids and proteids...	4 %
Ferric oxid.....	0.6%
Bone marrow extract.....	5 %
Nuclein	gr. $1\frac{1}{10}$
Alcohol	$17\frac{1}{2}$ %

There is also an arseniated form which contains $1\frac{1}{40}$ grain of arsenous acid and $1\frac{1}{80}$ grain of strychnine. The iron present in a tablespoonful is stated to be equivalent to 20 minims of tincture of ferric chlorid.

Hemapectone. (52)

This is described as a preparation of "albumose-peptone" and hematin. It is also stated to contain 11% of alcohol.

Hematic Hypophosphites.

This is a compound syrup of hypophosphites made by different manufacturers. As commonly made each fluidounce contains

Potassium hypophosphite....	gr.	$1\frac{1}{2}$
Ferrous hypophosphite.....	gr.	$1\frac{1}{4}$
Calcium hypophosphite.....	gr.	1
Manganese hypophosphite....	gr.	1
Quinine hypophosphite.....	gr.	$7\frac{1}{16}$
Strychnine hypophosphite....	gr.	$\frac{1}{8}$

As made by one manufacturer it contains in addition, 1 grain of sodium hypophosphite.

Hematothyroidine.

This is a liquid preparation of thyroid gland.

Hematoxylin.

This is in yellowish or yellowish-brown crystals of a sweet taste. It is sparingly soluble in water, more soluble in alcohol or ether. It is used as a stain in microscopy.

Hematysin. (181)

This is stated to be made from the fresh plants *Stillingia sylvatica*, *Smilax sarsaparilla*, *Phytolacca decandra*, *Lappa minor* and *Xanthoxylum carolinianum*.

Hemec Tablets. (52)

These are stated to contain $\frac{1}{2}$ grain of hematin, $1\frac{1}{8}$ grains of nux vomica, and $1/120$ grain of arsenous acid. It is recommended in malaria and other ailments characterized by impoverishment or loss of blood.

Hemicranin.

This is a mixture of 5 parts of phenacetine, 1 part of caffeine and 1 part each of citric acid. It is used in migraine, headache, neuralgia, etc.

Heminal. (159)

This is described as a "blood-iron albuminate." It is stated to contain all the soluble albuminates and salts of blood without the objectionable excretory products.

It is marketed only in 2-grain tablets. It is recommended as a hematinic in anemia, chlorosis, convalescence, etc.

Hemisine.

(Burroughs, Wellcome & Co., Mfrs.)

This is described as the active principle of the suprarenal gland. It is in a dry, stable, soluble form and solutions may be made from it. It is marketed in tablets of various strengths, both plain and in combination with sodium chlorid and eucaine hydrochlorid, also in the form of rectal suppositories.

Hemogallol. (130)

This is an organic iron compound produced from blood by reduction of its hemoglobin by means of pyrogallol. Fresh defibrinated blood, suitably diluted with water is mixed with an equal amount of a saturated solution of pyrogallol which causes the precipitation of a voluminous precipitate which is separated, washed with water to remove pyrogallol and finally with alcohol. It is a reddish-brown, almost tasteless powder, insoluble in water, alcohol, etc. It is recommended for anemia, chlorosis, chronic nephritis, diabetes, and in convalescence. It is said to be very easily transformed into the blood-coloring matter by the organisms of debilitated persons. The dose is 4 to 8 grains, one-half hour before meals.

Hemoglobin.

See Hæmoglobin.

Hemol. (Hæmol—Reduced Hemoglobin—Parahemoglobulin.)

This is an organic iron compound produced from blood by reduction. Neutralized blood is shaken with zinc dust and water and the zinc removed from the product of the reduction. It is a dark-brown, almost tasteless powder, insoluble in water, alcohol, etc. It contains traces of zinc oxid. It is claimed to be useful in anemia, chlorosis, etc., in doses of 2 to 8 grains.

Hemol, Arsenated.

See Arsenhemol.

Hemol Bromid.

See Bromo-Hemol.

Hemol, Cuprated.

See Cupro-Hemol.

Hemol, Iodized.

See Iodo-Hemol.

Hemonervine. (181)

This is put up in tablet form, each tablet being stated to contain

Calcium phosphoglycerate...	gr. 2
Hemoglobin	gr. 1
"Soluble iron"	gr. $\frac{1}{2}$
Strychnine nitrate	gr. $1/100$

With blood salts and stomachics.

Hemoquinine. (Compound Elixir of Peptonate of Iron, Manganese and Quinine with Arsenic.) (179)

One fluidounce is stated to contain 34 grains of so-called peptonate of iron (made by adding ammonio-citrate of iron to freshly prepared peptone of egg albumin) and $8\frac{1}{2}$ grains of so-called peptonate of manganese together with 5 grains of quinine peptonate (equivalent to 2.3 grains of quinine sulfate), and $\frac{1}{9}$ grain of sodium arsenate in a menstruum containing 20% of alcohol with glycerin and aromatics. The dose is 2 fluidrams 3 times a day.

Hemorrhoidic Pills.

See Pil. Hemorrhoidica.

Hemostatin. (211)

This is described as a "pure solution of the crystallized chlorid of the active hemostatic and blood-pressure raising principle of the suprarenal gland (1:1000)." It is also furnished in the powder form. Do not confound this with hæmostatin.

Henry's Carbohc Salve.

Carbolic acid.....	gr.	16
Oil of bergamot.....	drops	6
Oil of lavender.....	drops	3
Simple cerate.....	av.oz.	2

—Hager.

Henry's Cosmetic.

Oil of lavender.....	part	1
Oil of rosemary.....	part	1
Oil of bergamot.....	part	1
Oil of lemon.....	parts	3
Alcohol	parts	180

—Hager.

Henry's Magnesia.

This is a heavy calcined magnesia.

Henry's Three Chlorides. (Liquor Ferrisenic, Henry's) (formerly called Elixir Three Chlorides.) (97)

Each fluidram is stated to contain $\frac{1}{8}$ grain of iron protochlorid, $\frac{1}{128}$ grain of mercury bichlorid, and $\frac{1}{280}$ grain of arsenic chlorid, in a cordial of calisaya alkaloids.

Henry's Tri-Iodides.

This is stated to contain $\frac{1}{20}$ grain of colchicine, $\frac{1}{10}$ grain of decandrin,

$\frac{1}{3}$ grain of solanin, 10 grains of sodium salicylate and iodic acid (equal to $\frac{7}{32}$ grain of iodine) in 2 fluidrams of "aromatic cordial."

Hensel's Tonicum.

Marble dust.....	g.	30
Formic acid (sp. gr. 1.20)....	g.	55
Ferrous sulfate.....	g.	21
Solution of tersulfate of iron (sp. gr. 1.318).....	g.	100
Glacial acetic acid.....	g.	100
Alcohol	g.	400
Water	g.	600

Dissolve the marble dust in a mixture of the formic acid and half the water and the iron salt and solution in the acetic acid and the remainder of the water. Mix the two solutions, add the alcohol, and filter. Acetic ether as formed on standing but it is advisable to add 15 grams of it immediately upon making the preparation. This is a ferruginous tonic favored largely by homœopaths.—Ph. Ztg.

Heparon.

This is an organotherapeutic substance obtained by the action of pancreatic juice on the liver of the ox. It is said to be useful in diabetes as it aids the liver to split up grape sugar.

Hepatosmene. (215)

This is stated to be composed of 70 grains of sodium phosphate and 5 grains of sodium sulfate to the dram.

Hermophenyl. (Mercuric-Sodium Phenyldisulfonate.)

This is a white, amorphous powder, soluble in 7 parts of water, and containing 40% of mercury. It is strongly antiseptic and bactericidal, and in spite of containing so much mercury is recommended as a substitute for iodoform and salicylic acid. It is said to have no caustic action on the skin or mucous membranes. When taken internally the dose is $\frac{1}{4}$ to $\frac{1}{2}$ grain 3 times a day.

Heroids. (63)

Each dessertspoonful is stated to contain

Heroin.....gr. 1/12
 Terpin hydrate.....gr. 2
 Syrup of wild cherry.....m. 15
 Balsam of tolu and glycerin.. q. s.

Heroin. (Diacetyl-Morphine.)

Heroin Hydrochlorid.

Heroin is a synthetic alkaloid obtained by acetylizing morphine. These two substances are white, odorless powders, of a bitter taste. Heroin is practically insoluble in water, sparingly soluble in cold alcohol, readily soluble in warm alcohol or chloroform. The hydrochlorid is soluble in 2 parts of water and is also readily soluble in alcohol. On warming with mineral acids, both compounds are decomposed, morphine being reformed. These substances are directed to be kept in a cool, dry place, in well-corked bottles. They are used as substitutes for opiates in mixtures for coughs, asthma, phthisis, bronchitis, etc. The dose is 1/24 to 1/12 grain 3 times daily. On account of its solubility, the hydrochlorid is generally preferred.

Heroline.

This is a 33 1/3% emulsion of petroleum containing also 1/16 grain of heroin hydrochlorid and 8 grains each of calcium and sodium hypophosphites in each fluidounce.

Heromal. (Malt Extract with Heroin and Hypophosphites.) (179)

Each dose of 2 fluidrams is stated to contain 1/48 grain of heroin and 1/2 grain of sodium hypophosphite in a menstruum of malt extract with 6% of alcohol. The dose is 2 fluidrams every 3 or 4 hours.

Herophosphites. (179)

This is stated to contain hypophosphites of sodium, potassium, calcium, iron, manganese, quinine and strychnine with heroin hydrochlorid. The solution is stated not to contain sugar.

Heroterpine Elixir.

See Elixir Heroterpine.

Herpicide.

According to analysis by the New Hampshire Board of Health, this leaves

2 1/2% of residue upon evaporation, about 1% of which is salicylic acid with some borax or boric acid; it shows no alkaloïds or vesicants; and it contains 56.2% of alcohol, practically all of which was found to be wood alcohol.

Hetocresol. (Cinnamylmetacresol.)

This is a white or yellowish powder, insoluble in water but soluble in chloroform, ether or hot alcohol. It is recommended by Prof. Landerer for injection in tuberculosis.

Hetoform. (Bismuth Cinnamate.)

This is a white powder of a cinnamon-like odor, obtained by decomposition between bismuth nitrate and sodium cinnamate.

Hetol. (Sodium Cinnamate.) (103)

This may be prepared by saturating a hot aqueous solution of sodium carbonate with cinnamic acid, evaporating and crystallizing. Cinnamic acid is obtained from balsam of tolu or may be produced synthetically by heating together benzaldehyde, sodium acetate and acetic anhydride. Sodium cinnamate is a white crystalline powder, soluble in 20 parts of water, the solution being faintly alkaline. On boiling, the alkalinity becomes stronger on account of the decomposition of the cinnamate to form carbonate. It is incompatible with acids and with oxidizing agents, such as potassium permanganate.

Balsam of peru, cinnamic acid and sodium cinnamate are recommended by Prof. Landerer for the treatment of phthisis, these substances being injected intravenously. The dose of the cinnamate is 1/60 grain, gradually increased to 1/3 grain, in a 1 to 5% solution, injected intravenously 3 times a week for long periods, say from 3 to 18 months.

Hetol-Caffeine. (Caffeine Sodiocinnamate.)

This is prepared by warming 106 parts of caffeine and 85 parts of hetol with 400 parts of water on a water bath, and evaporating the solution to dryness. It

is an amorphous, white, odorless, bitter powder, soluble in 2 parts of water and 50 of alcohol.

Hetralin.

This is a new hexamethylenetetramine derivative of which it contains 60%. It is in needle-shaped crystals, soluble in 4 parts of hot water and 14 parts of cold water. It is used in cryitis in doses of 8 grains 3 times a day.

Hexamethylenamine.

See Hexamthylene-tetramine.

Hexamethylenamine Methylenecitrate.)

See Helmitol.

Hexamethylenetetramine.

This is known in the U. S. P. as hexamethylenamine and commercially by a great variety of names such as cystogen, cystine, cystamine, aminoform, formin, urotropin, uritone, uroformin, hexamine and many others. It is a condensation product obtained by the action of ammonia upon formaldehyde. It is in colorless, odorless crystals or whitish powder, of a somewhat sweetish and warming taste. It is soluble in about 1½ parts of cold or hot water and in 10 parts of alcohol. The aqueous solution is alkaline to litmus paper. Hot water and acid syrups are liable to decompose it. It should be kept in well-stoppered bottles.

It is used as a uric acid solvent and as a urinary antiseptic and has been gaining in popularity since its introduction. It is prescribed in cystitis, urethritis, bacteriuria, gonorrhea, prostatitis, etc. The dose is 5 to 15 grains, well diluted with water, 2 or 3 times daily before meals.

Hienfong Essence.

I.

Bay leaves.....g.	1
Laurel berries.....g.	1
Camphor	15
Oil of peppermint.....g.	15
Oil of crisped mint.....g.	10
Oil of anise.....g.	2.5
Oil of fennel.....g.	2.5
Oil of lavender.....g.	2.5

Oil of rosemary.....g.	2.5
Ether	80
Alcohol (90%).....g.	2000

Color green by adding chlorophyll or macerating with grass.

II. According to Hager, Schoeffer's preparation consists of a tincture of 5 parts each of bay leaves and laurel berries, 15 parts of ether and 200 of alcohol, and to this is added 1½% of camphor, 1% each of oils of crisped mint and peppermint and ¼% each of oils of anise, fennel, lavender and rosemary.

III. Kaupitz's formula:

Oil of caraway.....g.	10
Oil of peppermint.....g.	32
Oil of anise.....drops	80
Balsam of peru.....g.	20
Camphor	24
Alcohol (90%).....g.	3200

These formulas are from Ph. Ztg.

Hippol. (Methylene-Hippuric Acid.) (178)

This is an odorless, colorless, and tasteless prismatic crystals, sparingly soluble in water. It is recommended as a urinary antiseptic in bacterial diseases of the urinary tract. Formaldehyde is liberated in the system. The dose is 20 grains 4 times a day. It is marketed in powder and in 15-grain tablets.

Hirudin.

This is a preparation obtained from the leech and is said to represent the antistypic properties of this animal. It is made by extraction of the head pharyngeal rings and lips. It is in brown scales or masses, soluble in water but insoluble in alcohol or ether. It is used in the treatment of some diseases of women and wherever the coagulation of blood is to be prevented.

Histogenol.

This is described as nucleinic acid derived from herring brine and treated with 20% of sodium methyl-arsenate. It is used as a remedy for tuberculosis.

Histosan. (Guaiacol Albuminate.)

This is a light brown powder, of a faintly aromatic odor and taste, and is

soluble in water. It is said to be better tolerated by the stomach than other guaiacol compounds. The dose is 4 to 8 grains. It is also marketed in the form of a 5% syrup, the dose of which is a teaspoonful 3 to 6 times a day. It is used in pulmonary tuberculosis and in diarrhea.

Hitt's Headache Powders.

These are stated to contain in each 7½ grains:

Acetanilid	gr. 4¼
Theine	gr. 6/10
Other ingredients.....	gr. 26/10

H.-M.-C. (Abbott.)

See Hyoscine, Morphine and Cactin Comp.

Hobb's Kerosene Liniment.

Oil of origanum.....	fl.dr. 4
Tincture of opium.....	fl.dr. 4
Tincture of stramonium.....	fl.dr. 4
Tincture of arnica.....	fl.dr. 5
Spirit of camphor.....	fl.dr. 5
Aromatic spirit ammonia....	fl.dr. 6
Chloroform	fl.oz. 1
Kerosene	fl.oz. 2

—Kilner.

Holadin. (70)

This is described as "an extract of the entire pancreas gland, presenting all the constituents both of the digestive and the internal secretion." It is stated to contain the tryptic, amylolytic and lipolytic ferments, also lecithin and nuclein. It is put up in gelatin capsules, each one containing about 3 grains. The dose is one capsule about 3 hours after meals and one at bedtime.

Holloway's Ointment.

This preparation was examined by the French government chemists who stated that it is composed of butter, lard, white and yellow wax, and Venice turpentine. According to Cooley's Cyclopedia, the following is the formula generally employed:

Fresh butter, free from water	
or salt.....	av.oz. 12
Yellow wax.....	av.oz. 4
Resin	av.oz. 3
Vinegar of cantharides.....	fl.oz. 1
Balsam of fir.....	av.oz. 1

Expressed oil of mace.....	gr. 30
Peru balsam or liquid	
styrax	drops 10 or 12

Melt the butter, wax and resin, add the vinegar, allow the whole to simmer for 10 or 12 minutes, or until the moisture is nearly evaporated; allow to cool somewhat, add the remaining ingredients, and stir until cool.

Holloway's Pills.

The following is given by Cooley:

Aloes	parts 2
Jalap	part 1
Ginger	part 1
Myrrh	part 1

Make into a mass with mucilage and divide into 2-grain pills.

Dorvault gives the following as the composition of these pills as found on analysis:

Socotrine aloes.....	gr. 60
Rhubarb	gr. 25
Pepper	gr. 7
Saffron	gr. 3
Sodium sulfate.....	gr. 3
Make 144 pills.	

The pills are rolled in powdered ginger.

Holman's Liver Pad.

This is similar:

May apple root.....	oz. ½
Leptandra root.....	oz. ½
Fenugreek	oz. 1½
Guaiac resin.....	oz. 1½
Bayberry bark.....	dr. 2
Red cinchona bark.....	oz. 2
Oil of eucalyptus.....	fl.dr. 2

Grind the solids to powder, mix with them the oil and make into a pad, using cotton cloth of suitable thickness as an envelope.—Kilner's Form.

Holocaine Hydrochlorid.

This is in small, colorless, odorless and faintly bitter crystals, producing a transient numbness on the tongue. It is soluble in 50 parts of water and freely soluble in alcohol. It should form a clear, colorless solution which is neutral or faintly alkaline. It is incompatible with alkalies and their carbonates and the usual alkaloidal reagents. It is a local anesthetic like cocaine but having the advantage of quicker effect and

antiseptic action. 5 minims of a 1% solution when instilled into the eye are usually sufficient to cause anesthesia in from 1 to 10 minutes. It is more toxic than cocaine. Aqueous solutions are decomposed even by the alkali contained in glass bottles, so that solutions should be dispensed either in porcelain containers or in bottles which have previously been boiled in hydrochloric or sulfuric acid and thoroughly rinsed in distilled water.

Holzinol.

This is a mixture said to consist of 1 part of formaldehyde, 20 parts of menthol and 25 parts of wood alcohol. It is recommended as a disinfectant in 3% solution.

Homatropine Hydrobromate.

This is in white, non-hygroscopic leaflets, which are soluble in 10 parts of water. It is used chiefly as a mydriatic, being less irritating, less liable to produce systemic disturbance, and is less persistent than atropine. It is used in 1% aqueous solution.

Hommel's Hæmatogen.

See Hæmatogen.

Honthin.

This is described as a keratinized albumin tannate (or tannin albuminate). It is a grayish-brown, odorless, tasteless powder, insoluble in water. It is used as an intestinal astringent. It is insoluble in the acid secretion of the stomach but is gradually decomposed by the alkaline fluids of the intestine. The dose for adults is 15 grains, for children 3 to 5 grains, several times daily.

Hooper's Female Pills.

The following is the formula advocated by the Philadelphia College of Pharmacy some year ago:

Aloes, Barbadoes.....	gr. 96
Ferrous sulfate, dried.....	gr. 25
Extract of black hellebore...	gr. 24
Marshmallows.....	gr. 24
Soap.....	gr. 24
Canella.....	gr. 12
Ginger.....	gr. 12

Beat them well together into a mass, with syrup or water, and divide into pills, each containing 2½ grains.

Hop Bitters.

The following is said to be similar:

Hops.....	av.oz. 4
Orange peel.....	av.oz. 2
Dandelion.....	av.oz. 2
Buchu.....	av.oz. 1
Mandrake.....	av.oz. 1½
Sugar.....	av.oz. 16
Alcohol.....	fl.oz. 16
Water, to make.....	pints 8

Macerate the drugs in coarse powder in the alcohol and 7 pints of water, at a warm temperature, for 8 days. Express and dissolve the sugar in the liquid, to which add water, if necessary, to make 8 pints, and strain.—W. D.

Hopogan.

This is a name for magnesium dioxid. See also Biogen.

Horlick's Infant's Food.

The following is an abstract of the patent specifications for this preparation: Macerate equal parts of barley malt and ground wheat (groats) in fresh cow's milk, and stir until it forms a loose, soft mash. This mash is then placed in a jacketed kettle and the heat gradually raised to 150° F., and kept agitated for half an hour; the starch is thus transformed into dextrin and grape sugar by the diastase of the malt. The temperature is now raised to 170° C., for 15 minutes, after which the mixture is pressed to remove the liquid which is evaporated in a vacuum pan to a dry extract, and is then powdered.

Horner's Rheumatic Lightning.

The following makes a somewhat similar article:

Fl. ext. colchicum seed.....	fl.dr. 1
Fl. ext. black cohosh.....	fl.dr. 4¼
Potassium acetate.....	gr. 128
Sodium salicylate.....	gr. 256
Alcohol.....	fl.oz. 2½
Water, to make.....	fl.oz. 16

—N. I.

Horsford's Acid Phosphate.

Each fluidram is said to contain 5½ grains of free phosphoric acid, 3 grains

of calcium phosphate, $\frac{1}{2}$ grain of magnesium phosphate, $\frac{1}{4}$ grain of potassium phosphate, and $\frac{1}{6}$ grain of iron phosphate. The total amount of phosphoric acid, free and combined, in one fluid-dram, is said to be 7 grains.

Hostelley's Wine of Cod Liver Oil Comp.

Each teaspoonful is stated to represent

Cod liver oil.....m. 21
 Arsenic chlorid.....gr. 1/200
 Mercury bichlorid.....gr. 1/128
 Iron protochlorid.....gr. $\frac{1}{4}$
 Port wine and vegetable flavoring.

Howe's Compound Damiana Tablets.

These are stated to be composed of phosphorus, extracts of nux vomica, damiana, coca, saw palmetto, and corn silk, and "ferri soluble." The manufacturers state that they use "fresh green extracts."

Howe's Kidney Tablets.

These are stated to be composed of extracts of asparagus, buchu, couch grass, and corn silk, and oil of juniper and nitre. The manufacturers state that they use "fresh green extracts."

Hoyt's Hiawatha Hair Restorative.

According to Chandler's analysis, this is a 1% ammoniacal solution of silver nitrate. No other metals were found.

Hudson's Honey of Elm.

This is a tooth paste containing precipitated chalk, powdered pumice stone, glycerin, oil of clove, oil of wintergreen, and simple syrup.—Era Form.

Hufeland's Nerve Tea.

Valerian root.

Avens root.

Peppermint herb.

Orange flowers, each, equal parts.

—Hager.

Hunn's Drops with Chloroform. (17)

Each fluidounce is stated to contain
 Oil of anise.....fl.dr. 1
 Oil of clove.....fl.dr. 1
 Oil of peppermint.....fl.dr. 1
 Oil of cajeput.....fl.dr. 1
 Chloroformm. 15

Hunter's Red Drops.

Mercuric chlorid.....gr. 10

Hydrochloric acid.....drops 12

Comp. tincture lavender....fl.oz. 1

Mix, carefully dissolving the mercuric chlorid.

The dose is 5 to 20 drops. It has been used as an alterative in syphilitic diseases.

Husband's Magnesia.

This is heavy calcined magnesia.

Huxley's Glycerophosphates.

See Glycerophosphates Syrup and Tablets.

Huxley's Menthol and Wintergreen Cream.

This is an antirheumatic cream in collapsible tubes, stated to contain 10% each of menthol and wintergreen.

Hydracetin. (Pyrodine—Acetylphenylhydrazin.)

This is in colorless, odorless and tasteless crystals, soluble in about 50 parts of water and very soluble in alcohol. It is an antipyretic, used in rheumatism and febrile complaints. Being somewhat toxic it is not much used internally but is used externally mostly as a 10% ointment in psoriasis. The internal dose is $\frac{1}{2}$ to 2 grains 3 times a day.

Hyperphosphine, Prunier's.

This is described as a pure phosphoglycerate of lime prepared according to the original process of Portes and Prunier. It is supplied in three forms, granulated, syrup and cachets.

Hypo-Quinidol Pills.

See Pil. Hypo-Quinidol.

Hydragogin.

This is a preparation stated to contain 3 parts of tincture of digitalis, 5 parts of tincture of stramonium, scillitoxin and scillipicrin, the active principles of squill, and 1 part of oxysaponin from *Hermaria glabra*. It causes intense diuresis without severe catharsis. It is recommended as a diuretic in dropsy, ascites, etc. It is also used as

a cardiac tonic. The dose is 10 to 15 drops every 3 or 4 hours.

Hydrarg-Iodo-Nucleoid.

This is put up in tablets, each containing 5 grains of Iodo-Nucleoid and $\frac{1}{2}$ grain of Hydrarg-Nucleoid.

Hydrarg-Nucleoid. (63)

This is described as a compound of mercury with nuclein, containing 10% of the former. One grain is said to equal $\frac{1}{6}$ grains of mercury protiodid. It is said to be a tasteless, non-irritating substitute for the inorganic salts of mercury. It is put up in $\frac{1}{2}$ and 1-grain tablets.

Hydrargyne.

This is a bibulous paper saturated with corrosive sublimate, and intended for the extemporaneous preparation of an antiseptic solution.

Hydrargyrin.

This is a mercurial ointment made with lanolin as the vehicle.—Coblentz.

Hydrargyrol. (Mercury Paraphenyl-sulfonate.)

This is in reddish-brown scales, of aromatic odor, readily soluble in water and glycerin. Its advantages over other mercuric compounds are that it is not corrosive, is but slightly toxic, does not precipitate albumen and does not corrode instruments. For surgical purposes the solution should be of the strength of 1 to 2,500.

Hydrastine.

This is an alkaloid derived from golden seal. It is in white crystals, easily soluble in alcohol, ether and chloroform, but almost insoluble in water. It is an alterative tonic, antiperiodic, etc. It is not used externally on account of its insolubility. The dose is $\frac{1}{4}$ to 1 grain.

The hydrochlorid is the principal soluble salt. It is a white crystalline powder readily soluble in water. It is used as an astringent in gonorrhea, conjunctivitis, leucorrhea, etc.; also as an external application in dermic hyperidrosis,

acne, seborrhea, etc. As an astringent it is used in 1/10 to 6/10% solution and as an ointment or lotion containing 1% of alkaloid for skin application.

Hydrastinine Hydrochlorid.

This is a salt of artificial alkaloid derived from hydrastine. It is in lemon-yellow, hygroscopic, odorless, bitter crystals or crystalline powder, very soluble in water and alcohol. It should be kept in well-stoppered bottles.

It is used as an uterine hemostatic and vaso-constrictor in hemorrhages, congestive dysmenorrhea, metorrhagia, etc. The dose is $\frac{1}{2}$ grain 4 or 5 times daily with sugar, in capsules. As a subcutaneous injection, 8 to 15 drops of a 10% aqueous solution are used once daily.

Hydrastis and Calisaya Tonic. (218)

Each fluidounce is stated to contain 32 grains each of golden seal and calisaya, 16 grains of gentian, and 4 grains of nux vomica.

Hydrastoids. (63)

This is described as a palatable standardized solution of the active principles of Hydrastis canadensis, each teaspoonful containing 10 grains of golden seal.

Hydriodic Ether.

See Ethyl Iodid.

Hydrobromic Ether.

See Ethyl Bromid.

Hydrocerin.

This is an ointment vehicle consisting of wax, petrolatum and water.

Hydrochinone. (Hydroquinone—Paradioxybenzene.)

This is in colorless prisms soluble in 17 parts of water, easily soluble in hot water, alcohol and ether. It is an antiseptic and antipyretic like resorcin. In 1 to 3% solution it is used in conjunctivitis, gonorrhea, etc. It is used in rheumatism, fevers, etc., in doses of 5 to 15 grains. It is also used as a photographic developer. The solution should be excluded from air and light.

Hydrocine.

This is the formula as given by the manufacturers in their literature:

Hyper-oxidized hydro-carbon
(vegetable)gr. 28
Pure rock sugar.....gr. 8
Powdered pancreatin.....gr. 1/20

Hydrocyanate of Iron. (194)

This is put up in ½ and 1-grain tablets, also in combinations with arsenic, with henbane, with horse nettle, with nux vomica, and with valerian.

Hydrogol.

This is an aqueous solution of colloidal silver.

Hydroleine. (Hydrated Oil.)

This is stated to contain cod liver oil, pancreatin, etc., and 1 grain of salicylic acid to each fluidounce.

Hydrosol.

This is an aqueous solution of colloidal mercury.

Hydroxylamine Hydrochlorid.

This is in colorless, crystalline plates, very hygroscopic, readily soluble in water and alcohol; used externally like chrysarobin and pyrogallie acid in 1/10 to 4/10 solution for psoriasis lupus, etc. Used also as a photographic developer.

Hydrozone.

This is described as a 30-volume aqueous solution of hydrogen peroxid.

Hydronal.

This is a polymeric form of anhydrous chloral, known also as viferral. It is a white powder, sparingly soluble in cold water, more freely in hot water. It is used as a hypnotic in doses of 15 grains. It is marketed in the form of 15-grain tablets.

Hymosa. (209)

This is stated to embody frangula, actea spicata, stellaria media, francisca uniflora, passiflora incarnata, rhus tox, and phytolacca.

Hyoscine Hydrobromate.

This is in colorless, permanent, odorless, acrid crystals which are soluble in 1½ parts of water and in 16 of alcohol;

but slightly soluble in ether and chloroform. It is used as a hypnotic and sedative in insanity, chorea, alcoholic tremor, etc., also as an anaphrodisiac, antisialogogue, mydriatic, etc. It is used but little externally. The dose as a hypnotic in insanity is 1/30 grain; as a sedative, 1/150 to 1/100 grain. Subcutaneously it is administered as a hypnotic in doses of 1/120 to 1/60 grain; as a sedative, 1/300 to 1/200 grain.

Hyoscine, Morphine and Cactin Comp. (1)

There are hypodermic tablets intended for surgical and obstetrical anesthesia, each one containing hyoscine hydrobromid, gr. 1/100, morphine hydrobromid, gr. ¼, and cactin (Abbott), "the active principle of Cactus grandiflorus," gr. 1/67.

Hyoscyamine.

This is in white, silky, permanent crystals, sparingly soluble in water, readily soluble in acidulated water, alcohol, ether and chloroform. In its action it is like atropine, but is used chiefly as a hypnotic in mental disorders; as an anodyne and antispasmodic in asthma, epilepsy, colics, chorea, etc.

Dose (ordinary): 1/120 to 1/30 grain as a hypnotic for the insane. Its antidotes are the same as for atropine.

The soluble salts hydrobromid and sulfate are used, both of which are very freely soluble in water.

Hyos-Sco-Deine. (48)

This is stated to contain hyoscyamine, scopolamine, piperidin, strychnia, pilocarpine, caffeine and codeine.

Hyos-Sco-Phine. (48)

These are stated to contain hyoscyamine, scopolamine, piperidine, pilocarpine, caffeine and morphine.

Hyper-Samphire.

This was analyzed by Kebler of the department of agriculture who found it to be a mixture of sodium chlorid (72%) and sodium salicylate and sulfite. Other analyses however, showed other results so that different samples

vary in composition. The substance is recommended as an egg preserver.

Hypnal. (Chloral-Antipyrine.)

This is prepared by triturating antipyrin and chloral hydrate together in molecular proportions, dissolving the resultant oily liquid in hot water and allowing the solution to cool. It is in colorless crystals or white crystalline powder, soluble in 10 to 11 parts of cold water, freely soluble in hot water and soluble in $3\frac{1}{2}$ parts of alcohol. It is incompatible with alkalis, their carbonates and bicarbonates and with metallic salts. It is an analgesic and hypnotic resembling chloral in its action but is said to be less liable to produce injurious effects on the vasomotor center or the heart. The dose is 15 to 30 grains; although supposed to be less toxic than chloral, doses up to 45 grains should be used with caution.

Hypnoacetin.

This is in colorless crystals which are readily soluble in water but insoluble in alcohol. It is used as a hypnotic and antipyretic in doses of 5 grains.

Hypno-Bromic Compound. (211)

Each fluidounce is stated to contain

Hydrated chloral.....	gr. 96
Potassium bromid.....	gr. 48
Extract of henbane.....	gr. 1
Ext. cannabis indica.....	gr. 1
Morphine sulfate.....	gr. $\frac{1}{2}$

Hypnone. (Acetophenone.)

This is a colorless, oily liquid of peculiar odor and pungent taste. It is only slightly soluble in water, but is readily miscible with alcohol, ether and oils. It is used as a hypnotic, in doses of 2 to 5 minims.

Hypnopyrine.

Under this name a new remedy has been placed on the European market, which is stated to be a complex chlorine-derivative of quinine. On analysis, however, it has been found (Repert. Pharm.) to be a mixture of already well-known bodies, and not a new compound. It is very bitter, soluble in 8

parts of water, also soluble in alcohol and acids. The dose is 4 grains 3 or 4 times a day as an antipyretic and analgesic in migraine, neuralgia and rheumatic pains.

Hypophosphites, Hayes' Acid.

See Hayes' Acid Hypophosphites.

Hypophosphites Solutions.

See Solution of Hypophosphites and Solution Hypophosphites Comp.

Hypophospholoid. (Syrup of the Mineral and Alkaloid Hypophosphites.) (17)

According to the manufacturers, each fluidram contains sodium and calcium hypophosphites, each $\frac{1}{2}$ grain; iron and quinine hypophosphites, each $\frac{1}{3}$ grain; and strychnine hypophosphite, $\frac{1}{96}$ grain.

This preparation is also put up with cherry and with manganese, the latter containing $\frac{1}{4}$ grain of manganese hypophosphite to the fluidram.

Hyrgol. (Colloidal Mercury.) (178)

This is a dark, solid body, fairly soluble in cold water, insoluble in alcohol and ether. The aqueous solution is neutral in reaction and is not corrosive. The mercury is precipitated in the insoluble condition by acids, alkalis, alkaline earths and salts of the heavy metals. It has been used in syphilis internally in the form of pills and tablets and externally as a 10% ointment. The dose is $\frac{1}{2}$ to $\frac{3}{4}$ grain three times daily.

Hysterol.

This is the name applied to bornyl valerate when put up in gelatin pearls, each containing 4 grains.

Iatrevin.

This is a condensation product of menthol and isobutylphenol. It is a clear liquid of an aromatic odor. It is a disinfectant and is recommended for chronic catarrh.

Ibit. (Bismuth Oxyiodotannate.)

This is a greenish-gray, odorless, tasteless powder, insoluble in ordinary solvents but decomposed in contact with

water, iodine being liberated. Light also decomposes it. It is recommended as an external antiseptic in powder form, or in suspension with glycerin and water.

Ichthalbin. (Ichthyl Albuminate.) (109)

This is a compound of ichthyl-sulfonic acid with albumin containing 75% of ichthyl. It is a very fine, grayish-white odorless and nearly tasteless powder. It is insoluble in water, in the gastric juice or in acid liquids. Its internal action and uses are the same as those of ichthyl, but is said to be free from the unpleasant effects of nausea, eructations, etc.

The dose for infants is 2 to 5 grains, older children, 10 to 15 grains, and adults, 15 to 20 grains. It is used chiefly for intestinal disorders.

Ichthammon. (168)

This is the ammonium compound of a sulfo acid obtained from a bituminous mineral by distillation with sulfuric acid and neutralization with ammonia. It has the physical properties of ichthyl.

Ichthargan. (Silver-Ichthyl.)

This is a compound of ichthyl and silver, claimed to contain 30% of metallic silver and 15% of sulfur in combination. It is a brown, amorphous, stable powder, having a faint chocolate-like odor. It is freely soluble in water, glycerin or diluted alcohol. Its aqueous solution darkens with precipitation of metallic silver when exposed to the light, but is said to remain unchanged in amber-colored bottles. It is incompatible with soluble chlorides. It is recommended in all forms of gonorrhea. It is claimed to have a higher content of silver than any other organic silver compound. It is used in 1/25 to 1/5% solution in gonorrhea, 3/10% solution in posterior urethritis, and 1/2 to 3% solution in trachoma, in the latter case being applied with a brush.

Ichthermol. (Mercury Ichthyolate.)

This is a compound of ichthyl-sulfonic acid and mercury, containing 24% of metallic mercury. It is a dark colored, odorless powder, insoluble in water.

Ichtholferrin. (Iron-Ichthyl.)

See Ferrichthol.

Ichthoform. (Ichthyl-Formaldehyde.)

This is a compound of ichthyl and formaldehyde. It is a dark brown, nearly odorless and tasteless and permanent powder. It is insoluble with usual solvents. It is used as an antiseptic to arrest intestinal decomposition and inflammation. It is also used locally in endometritis, in ozena, wounds, ulcers, etc. The dose is 10 to 30 grains. Externally it is used undiluted, in 30 to 50% triturations and in 10 to 25% ointments.

Ichtholdine. (Glyceritum Ichthyolis Comp.) (141)

Each fluidounce is stated to contain

Ichthyl	gr. 4
Iodin	gr. 1
Sol. phenol.....	gr. 4
Boroglyceride	gr. 9
Eucalyptol	gr. 1/20
Hydrastine hydrochlorid.....	gr. 1/32

This is used in chronic endometritis, leucorrhea, gonorrhea, erysipelas, etc.

Ichthyalum Ointment. (143)

The active constituents are stated to be ichthyl, tar, phenol, fir balsam, zinc oxid and alum.

Ichthyodin.

This is a trade name for a purified ichthyl, said to be free from the sulfones and volatile oils of the latter.

Ichthyl. (Ammonium Sulfichthyolate.)

This consists largely of the ammonium salts of sulfonic acids derived from the tar of a bituminous shale which is found in the Tyrol and which contains the remains of many fossil fishes. It is a brown, viscid liquid, translucent in thin layers, having a bituminous odor

and taste. It is soluble in water, miscible with glycerin, oils and fats, not soluble in either alcohol or ether, but soluble in a mixture of equal parts of these two liquids. It contains about 10% of sulfur in natural combination and a further 7% introduced by the sulfonation. Ichthyol is precipitated from its aqueous solutions by acids while the fixed alkalies develop the odor of ammonia. It is incompatible with acid and saline solutions, fixed alkalies, their carbonates and iodids, alkaloidal salts, mercuric chlorid, etc.

It is recommended internally in phthisis, skin diseases, gout, scrofula, nephritis, intestinal disorders, etc. Externally it has been applied in erysipelas, burns, chilblains, carbuncles, rheumatism, ivy poisoning, etc., also in uterine and vaginal inflammation, gonorrhea, etc. Internally the dose is 3 to 30 minims, mostly in the form of pills or capsules. Locally it is used in 5 to 50 ointments and in 1 to 3% solutions for gonorrhea.

Ichthyol-Calcium. (Calcium Sulfichthyolate.)

This is put up in 1½-grain tablets, which are odorless and tasteless.

Ichthyol-Sodium.

This is a dark brown mass, more solid than ammonium ichthyol, but otherwise having similar physical properties. It contains 15% of sulfur. It is used for the same purposes as ichthyol. Its firmer consistence makes it more suitable for making pills.

Ichthyol-Salicyl.

This is a name for three mixtures containing respectively ¼, ⅓ and ½ of sodium salicylate. It is a brown, hygroscopic powder, not completely soluble in water. It is used in rheumatism, tuberculosis, etc., internally and externally.

Ichthyolodin. (Ichthyol-Piperazine.)

This is a brownish-black powder having little odor or taste. It is insoluble in water but is soluble in alkaline solutions. It is recommended in the treat-

ment of gout and uric acid diathesis in doses of 4 grains.

Ichthyolum Austriacum. (Petrosulfol.)

This is a product obtained by the sulfonation of a mineral oil having a large sulfur content, neutralizing with ammonia, and purifying the product. The action and uses are claimed to be the same as are attributed to ichthyol.

Ichthyomenthol.

This is the name given to an alcoholic solution of ichthyol, menthol, methyl salicylate and aromatic oils. The mixture is recommended for the external treatment of myalgia and rheumatic pains.

Idiaton.

Its approximate composition is given (according to W. D.) as follows:

Venice turpentine	part 1
Mastic	part 1
Chloroform	parts 3
Spirit of ammonia.....	parts 2
Oil of clove.....	parts 2
Oil of mustard (volatile), a	
.....	small quantity

This is a toothache remedy sold largely in Germany.

Indoform.

This is a white powder, obtained by the action of formaldehyde on acetyl-salicylic acid. It is sparingly soluble in cold water and has an acid, astringent taste. It is decomposed by the alkaline secretion of the intestines, forming at first methyleneglycol, which ultimately liberates formaldehyde. It has been given in gout, rheumatism, and neuralgia in the form of tablets, containing 7½ grains, one to three of which are taken in a glass of water during or after a meal.

Infant Sedative Alkaline. (31)

Each fluidounce is stated to contain	
Catnep	gr. 40
Celery seed	gr. 24
German chamomile	gr. 24
Fennel seed	gr. 24
Magnesium hydrate (in suspension)	gr. 24
Syrup of lactucarium.....	m. 80

It is recommended as an antacid and laxative for children.

Influenzine.

This is stated to be a mixture of phenacetine, caffeine, sodium chlorid and quinine salicylate.

Ingestol.

So far as known, this contains magnesium, sodium and potassium sulfates, sodium and ferric chlorids, alcohol and water.—Coblentz.

Ingluvin.

This is stated to be an enzyme derived from the digestive apparatus of the domestic hen. It is in yellowish powder. It is used in dyspepsia and the morning sickness of pregnancy, in doses of 5 to 10 grains.

Injectio Amylopsini (Hypodermic.) (70)

This is put up in sealed ampoules. It is stated to be prepared from the pancreas glands, and presents in a stable sterile solution, pancreatic diastase (amylopsin) devoid of the proteolytic (trypsin) and fat-splitting (lipase) ferments.

Injection Hirsch.

This is a preparation containing 1% of mercury oxycyanid and ½% of acoin.

Injectio Trypsini (Hypodermic.) (70)

This is put up in sealed ampoules. It is prepared directly from the fresh pancreas gland. It is stated to contain trypsin in normal association with the other soluble enzymes and constituents of the pancreas secretions.

Intestin.

This is a compound or mixture of bismuth oxid, naphthalin and benzoic acid. The dose is 5 to 10 grains.

Iodalbacid.

This is a combination of albumin and iodine, containing 10% of the latter. It is a yellowish powder, soluble in water, and is used internally as a substitute for iodids in doses of 15 grains 3 times daily.

Iodalbin. (159)

This is a compound of iodine with albumen, containing 21½% of iodine. It is a reddish-colored powder, practically tasteless, and of a peculiar, not unpleasant odor. It is insoluble in water, alcohol or acids, but soluble in water, alcohol or acids, but soluble in alkaline solutions. It has the properties of other iodids. It is marketed in the form of powder or in 5-grain capsules.

Iodalgin.

This is an organic compound of iodine stated to contain 50% of the latter. It is said to liberate iodine on contact with the tissues and is therefore a powerful antiseptic. It is odorless and soluble in water. It is used as a substitute for iodoform. The internal dose is 6 to 8 grains.

Iodalia.

This is a saccharated compound of iodine with tannin, which is stated to contain 1.2% of iodine. It is in yellow, amorphous masses soluble in water and of a sweet taste. It is an agreeable method of administering iodine to children, being said to be well borne by infants. The dose is 1 to 2 teaspoonfuls 3 times a day.

Iodamyl.

This is a name for iodized starch, which see.

Iodan. (69)

This is stated to be a 25% solution of iodine in goose oil from which the stearin has been removed. It is a dark brown, oily liquid. It is used externally and internally wherever iodine is indicated. It is marketed in two strengths, 10% and 25%. The former is intended for external use, the latter for internal use, and is put up in 5 and 10-minim capsules.

Iodferratos. (26)

This is a syrupy liquid containing 3/10% each of iron and iodine.

Iodia. (19)

This is described as a combination of the active principles obtained from the

green roots of stillingia, helonias, saxifraga, menispermum and aromatics, and to each dram of liquid used is said to be added 5 grains of "iod. potas." and 3 grains of "phos. iron."

Iodic Acid.

This is in white, rhombic crystals, which are soluble in water but insoluble in alcohol. It is put up in the form of pencils, which are used as a caustic, astringent and hemostatic for the removal of warts, in the treatment of chancre, etc.

Iodin-Eugenol. (Iodo-Eugenol.)

This is a compound analogous to thymol iodid. It is a yellowish powder, insoluble in water, slightly soluble in alcohol, and soluble in ether and fixed oils. It is used as an antiseptic.

Iodinized Emulsion. (Scott.) (58)

Each fluidram is stated to contain

Oil of turpentine	m. 3½
Oil of nutmeg	m. 1
Oil of wintergreen, true	m. ¼
Oil of peppermint	m. ⅛
Carbolic acid	gr. ½
Iodin	gr. ⅞
Alcohol	m. 4¾
Simple syrup,	
Elixir of lactated pepsin, q. s.	

It is recommended for typhoid fever, dysentery, chronic diarrhea, etc.

Iodinol. (128)

This is an iodized sesame oil similar to iodipin.

Iodipin. (Iodized Sesame Oil.) (130)

This is an iodine addition product of sesame oil. It is prepared by action of iodine chlorid on sesame oil in sufficient quantity, theoretically calculated, to produce the required iodization. It is a thick, yellow, oily liquid having a purely oily taste; it is insoluble in water and alcohol but soluble in ether and chloroform. It is made in two strengths, 10% and 25% iodine, the former being intended for internal, the latter for hypodermic use. The former is always supplied unless the latter is specially mentioned. The 25% is also supplied in capsules containing 30 grains each.

It acts upon the system similarly to the iodids, but its action is said to be more lasting and to have less tendency to iodism. The dose of the 10% is 1 to 3 fluidrams 3 times a day in emulsion or pure flavored with peppermint oil, of the 25% (hypodermically), 30 to 90 minims.

Iodized Starch.

This is now mentioned in the appendix to the N. F. It is coming into use again as a substitute for iodine and iodids, for internal and external use.

Iodlecithin.

This is a compound of iodine and lecithin, stated to contain 20% of the former. It is a brownish-red substance of the consistence of lecithin.

Iodoanisole. (Orthoiodoanisole.)

This is an oily liquid of an aromatic, very penetrating odor, insoluble in water, very soluble in alcohol, ether and chloroform. It is said to be a powerful antiseptic.

Iodocol.

This is a combination of iodine and guaiacol. It is used in consumption, tuberculous bronchitis, and the catarrhal stage of bronchial asthma in doses of 3 to 6 grains 4 times a day.

Iodoacrolein. (Carvacrole Iodide.) (111)

This is an iodine derivative of the phenol carvacrole. It is a light, nearly odorless powder, soluble in ether, chloroform and oils. It is recommended as a substitute for iodoform. It is patented in the United States.

Iodo-Eigon.

This is an insoluble, odorless powder, containing 20% of iodine in combination. It is used as a substitute for iodoform in the treatment of wounds and sores, and is also employed in gynecological cases, such as ulcerations and catarrhal conditions. It may be mixed with ointments or with talcum to be used as a dusting powder.

Iodo-Eigon-Sodium.

This is a yellowish, odorless, almost tasteless powder, soluble in water, and containing 15% of iodine. It is intended for internal use.

Iodo-Eigon Wine.

This contains in each teaspoonful 1 grain of iodine in combination with albumen.

Iodo-Eugenol.

See Iodin-Eugenol.

Iodofan.

This is a condensation product of formaldehyde and iodoresorcin. It is a brick red, odorless, tasteless powder which is used as a substitute for iodoform and thymol iodid. It contains 36% of iodine.

Iodoformal. (212)

One hundred grams are stated to contain thymol iodid equivalent to .156 grams of thymol; bismuth subiodid equivalent to 2 grams of bismuth subnitrate; cinchonine periodid equivalent to 4.92 grams of cinchonine sulfate; acetanilid, 20 grams; phenyl salicylate, 1 gram; phenol, $\frac{1}{2}$ gram; formaldehyde-gelatin equivalent to 1.25 gram of 40% formaldehyde solution; and boric acid, 67.39 gram. It is said to liberate iodine, formaldehyde and phenol in contact with the tissues.

Iodoformin.

This is a combination of formin and iodoform, which is stated to contain 75% of iodoform which is liberated on contact with wound tissues. It is a whitish powder with a faint iodoform odor and insoluble in water, alcohol or ether.

Iodoformogen. (Iodoform Albuminate.) (109)

This is a nearly odorless mixture of iodoform and albumin. It is prepared by precipitating a solution of albumin with alcoholic solution of iodoform and heating the precipitate at 120° C. It is a very fine, voluminous, light-yellow, nearly odorless powder, non-hygroscopic

and non-conglutinating. It is insoluble in water and sterilizable at 100° C. without decomposition.

Its action is that of iodoform, which is slowly liberated in connection with wound surfaces, making the action more persistent. Being about three times as voluminous as iodoform, it is usually applied undiluted to the affected parts. Mixed with an equal amount of boric acid, it may be used as a snuff in ozena.

Iodogallicin. (Bismuth Oxydo-methyl-Gallate.)

This is a light amorphous grayish powder, odorless and insoluble in the ordinary solvents. In contact with acids, alkalies or water, it is gradually decomposed into its components. It is used on wounds and ulcers and is recommended for ulcers of the cornea.

Iodoglobin.

This is a name given to a kaolin poultice mass.

Iodo-Hemol. (Iodized Hemol.)

This is hemol containing 16% of iodine. It is used as an alterative instead of other iodids, the dose being 3 to 10 grains 3 times daily.

Iodol. (Tetridopyrrol.)

This is a brown, inodorous, tasteless powder, insoluble in water, soluble in 3 parts of alcohol, 15 parts of ether, 50 parts of chloroform and 3 parts of oils. It contains 89% of iodine. It is used as an antiseptic instead of iodoform, having the advantage of being odorless and non-toxic. Internally it is used as a general alterative in doses of 5 to 10 grains.

Iodo-Mangan. (Liquor Ferro-Mangani Iodopeptonati.)

This is Ferro-Mangan (which see), to which has been added 45% of iodo-peptone, the latter containing 15% of iodine. It forms a clear dark-brown liquid of agreeable odor and taste and a slightly acid reaction. It is claimed to be a reconstructive tonic of value in scrofula, rheumatism, etc.

Iodo-Mildine. (63)

Each ounce is stated to contain

Iodin (in free state).....	gr. 4
Oil of pine needles.....	m. 10
Oil of cubeb.....	m. 15
Oil of eucalyptus.....	m. 4
Camphor	gr. 4
Menthol	gr. 4
Phenol	m. 2
Mildoline (benzoinated), q. s.	

Iodo-Nucleoid. (63)

This is described as a combination of iodine with nuclein, containing 23% of the former. It is said to be a tasteless, non-toxic, non-irritant substitute for potassium iodide and other alkaline iodides. It is a reddish-brown powder, of faint odor and taste of iodine, insoluble with usual solvents and acids but soluble in alkaline liquids. The dose is 20 grains 3 times a day, which may be increased. It is also put up in 5-grain tablets.

See also Hydrag-Iodo-Nucleoid.

Iodophene.

This is now known as nosophene, which see.

Iodophenochloral.

This is a mixture of equal parts of tincture of iodine, chloral hydrate and carbolic acid.

Iodopyrin. (Iodantipyrin—Anti-pyrin Iodid.)

This occurs as colorless crystals or white crystalline powder, readily soluble in alcohol, sparingly in water. It is used as an analgesic, antipyretic and alterative in tuberculosis, migraine, etc., the dose being 5 to 15 grains 3 times daily.

Iodose.

This is described as being a definite compound of iodine with a nucleoprotein containing 10% of the latter. It is a reddish powder, insoluble in the gastric juice but soluble in the intestinal secretions. It is recommended for syphilis, rheumatism, goiter, asthma, etc., in doses of 5 to 20 grains before meals.

Iodosol.

This is a name said to be applied sometimes to iodine vasogen.

Iodosyl. (143)

This is described as a definite chemical compound containing 65% of iodine. It is an amorphous, bulky, garnet-colored powder, nearly odorless and is non-caustic, non-irritating and non-toxic. It is insoluble in water and oils and only slightly soluble in alcohol, ether or chloroform. It is an antiseptic and disinfectant, used as a dusting powder, either alone or with boric acid or talcum or in ointment form for burns, scalds, sores, chancre, ulcer, catarrh, etc.

It is put up as an ointment containing 6%, also as "ophthalmic ointment" containing 2%, also as pencils (for gonorrhea), ovoids (vaginal), nasal points (for catarrh), suppositories (for hemorrhoids), and gauze (moist) containing 5%.

Iodothyrene. (Thyroidin.)

This is a trituration of the active principle of the thyroid gland with sugar of milk, each 1000 parts representing 1000 parts of fresh gland and containing 3 parts of iodine. The fresh glands are freed from fat and boiled with dilute sulfuric acid; the liquid is cooled, the part that separates is collected, dissolved in alcohol, and evaporated to dryness. The product is further purified by washing with ether, after which it is mixed with 309 parts of milk sugar. The finished product is a white or yellowish white powder of the taste of milk sugar. It is used as an alterative and discutient in goiter, corpulency, myxedema, psoriasis, menstrual disorders, etc. The dose for adults is 10 to 30 grains; for children, 5 to 15 grains, per day. It is marketed in the form of powder and as 5-grain tablets.

Iodozen. (131)

This is stated to be an iodine derivative of methyl salicylate. It is a yellowish, nearly odorless powder, insoluble in water, soluble in 2 parts of alcohol, 3 of ether and 10 of chloroform; it is said to be non-toxic and non-irritant, and does not discolor the skin. It is used as an

antiseptic, either plain or mixed with starch, boric acid or acetanilid, or in the form a 10% ointment, for sores, burns, wounds, for catarrh of the nose and other catarrhal conditions, etc.

Iodyloform.

This is a combination of iodine with some gelatinous substance, containing 10% of iodine. It is a yellowish brown, inodorous powder, insoluble in water, alcohol or ether. It acts as an antiseptic by the gradual liberation of iodine, and is recommended for infected wounds, abscesses and sores of all kinds.

Iothion. (Di-Iodo-Hydroxy-Propane.)

This is a yellowish, oily liquid, of sp. gr. 2.4 to 2.5, and containing 77% of iodine. It is volatile at the body temperature and not unpleasantly odorous. It is insoluble in water but soluble in glycerin, oils, alcohol and other organic solvents. It is incompatible even with weak alkalies, should be kept in a cool, dry place, and be well corked. It is said to be a satisfactory substitute for iodine and iodids and is applied to the surface of the body in the same manner as mercurial ointment; it is said to be rapidly absorbed by the unbroken skin. It is applied generally in the form of a 25 to 50% ointment with a mixture of equal parts of wool fat and petrolatum as the vehicle. 30 to 60 grains is applied per day.

Irisol. (66)

This is stated by the manufacturers to be composed of iodoform and boric acid, and is said to be odorless. It is a reddish, resinous powder, soluble in ether, chloroform, fats and oils.

Iron Glycerophosphate.

This is in yellowish scales or powder, soluble in water or diluted alcohol. It is used as a nerve tonic and reconstructive in neurasthenia, convalescence, etc. Dose: 2 to 5 grains 3 times daily.

Iron Jelloids.

These are of the same composition as Bland's pills, but the mass is made up

with a jujube paste to prevent deterioration of the ferrous carbonate.

Iron Succinate.

This is an amorphous, red-brown powder, insoluble in water or alcohol. It is recommended as a solvent of biliary calculi. The dose is 60 grains after meals, at the same time chloroform is given in 10-drop doses 4 to 6 times daily.

Iron Tonol. (178)

This is a name for iron glycerophosphate.

Iron Tropon.

This is a brownish powder which is an albumenoid food preparation composed of tropon (pure albumen) and iron in an assimilable form, and also contains cocoa. The iron content is stated to be 2½%. It forms a soluble, palatable powder which is given in teaspoonful doses 3 times daily with water, milk, etc., in anemia, chlorosis, convalescence, etc.

Iron Vanadinate.

This is a dark grayish-brown powder, practically insoluble in water. It is used in anemia and chlorosis in doses of 1/60 grain 4 or 5 times daily every other day.

Isarol.

This is produced by distillation of the bituminous shale which is found in certain parts of the Alps, the distillate then being sulfonated and neutralized with ammonia. It is a dark, thick liquid like ichthyol, soluble in water, and used in the same manner.

Isoform Powder.

This is a mixture of para-iodoxy-anisol with an equal weight of calcium phosphate. Para-iodoxy-anisol is prepared by the oxidation of iodoanisole with chlorid and hypochlorites and is a colorless powder having a slight anise-like odor. It is soluble with difficulty in water and practically insoluble in alcohol and ether. It may be heated in the dry state to about 200° C. without decomposition. It contains over 47% of iodine and liberates iodine from a solution

of potassium iodid and acetic acid. It is liable to explode if heated or triturated, hence it is marketed in a mixture with an equal weight of calcium phosphate, which is designated "isoform powder." It is incompatible with acids and with reducing agents, such as iodids and with the substances generally which are incompatible with iodids.

It is a germicide and antiseptic in consequence of its oxidizing power, and is recommended as a substitute for iodoform. It is claimed to be non-toxic in comparatively large doses. The dose internally is 10 to 30 grains per day. Externally it is used as a dusting powder, as a paste with glycerin, in ointments, gauzes, etc., up to 10% of pure isoform. The manufacturers supply an isoform paste, consisting of equal parts of pure isoform and glycerin, and isoform gauze.

Isonaphthol.

This is another name for betanaphthol.

Isophysostigmine.

This is an alkaloid prepared from the ether-insoluble portion of the extract of calabar bean. The alkaloid is chemically similar to physostigmine, but physiologically it is about $\frac{1}{3}$ stronger.

Isopral. (Trichlor-Isoproyl Alcohol.)

This is obtained by reacting on chloral with magnesium-methyl iodid and decomposing the compound formed. It is in prismatic crystals of a camphoraceous odor and an aromatic, somewhat pungent taste. It volatilizes very readily at the ordinary temperature, forming sublimate similar to camphor. It is soluble in 35 parts of water but more freely in alcohol or ether. It should not be exposed to heat or air.

Its action resembles that of chloral but is active in smaller doses, being about twice as strong. It may be used as a substitute for chloral, and is serviceable as an alternative in cases in which it is necessary to give hypnotics a long time. The dose is 5, 10 or 15

grains in capsules or wafers, which should be dispensed in a well-stoppered bottle.

Itrol-Crede.

This is a silver citrate which is in a very fine powder and is used for diseases of the eye. Owing to the fact that it is extremely sensitive to light and air, it is put up in small black bottles containing $\frac{1}{2}$ or 1 gram each. See also Antiseptic-Crede.

Izal, Medical.

This is an English preparation which is in the form of an emulsion containing 40% of "izal oil." This is described as a new coal product which is recommended as an antiseptic and germicide for internal and external use. Medical izal is used internally in typhoid fever, dysentery, etc., in doses of 5 to 10 drops. Izal is also put up in the form of gauze, lozenges, ointment, soap, etc.

Janeway's Pills.

These are recognized in the N. F. under the title Compound Pills of Aloes and Podophyllum, the formula being as follows:

Each pill is to contain

Aloes	gr. 1
Resin of podophyllum.....	gr. $\frac{1}{2}$
Extract belladonna leaves.....	gr. $\frac{1}{4}$
Extract of nux vomica.....	gr. $\frac{1}{4}$

Jecorin. (Matterer's Cod Liver Oil Tablets.)

Each tablet is stated to contain

Cod-liver oil	gr. 45
Malt extract, dried	gr. 15
Cocoa	gr. 15
Sugar	gr. 75

Together with glycerin, vanillin, oil of bitter almonds (free from acid) and Ceylon cinnamon oil.

Jecorol.

This is another name applied to the extract of cod-liver oil (see Gaduol and Morrhuol). It is also applied to a Swiss preparation which is an emulsion of cod-liver oil containing chocolate and other flavors. This latter is put up in combinations:

Jecorol guaiacolate, containing 2% of guaiacol carbonate.

Jecorol iodid, containing 10% of iodipin.

Jecorol lecithinate, containing .6% of lecithin.

Jequiritol.

This is a sterile solution of abrin, the active principle of *Abrus precatorius*, and is used in ophthalmic practice. It retains its activity unimpaired. It is marketed in four strengths.

Jesson's Dental Anæsthetic.

This contains about 2.6% of cocaine hydrochlorid with some carbolic acid and oil of rose.—Sadler.

Jewsbury & Brown's Oriental Tooth Paste.

The following makes, according to Nelson's "Handbook," a similar preparation:

Carmine	gr. 60
Water	fl.dr. 2
Honey	av.oz. 6
Oil of peppermint.....	drops 5
Oil of anise.....	drops 5
Oil of orange.....	drops 10
Oil of wintergreen.....	drops 10
Precipitated chalk	sufficient

Rub together, using enough precipitated chalk to make a firm paste.

Jim Crow Corn Salve.

The principal active ingredient is stated to be salicylic acid, according to the manufacturers.

Judkins' Ointment.

Linseed oil	av.lb. 1
Red lead	av.oz. 4
Lead acetate	gr. 60
Oil of turpentine.....	m. 30

Boil the oil in an earthen pot, add the red lead, gradually and with stirring, and then incorporate the other ingredients.—D. C.

Joret & Homolle's Apiol Capsules.

According to Hager, these contain 3 grains of apiol each.

Kadiol.

This is a name said to be applied to oil of cade.

Kahama Urethral Bougies. (102)

The formula is given as follows by the manufacturers:

Hydrastin muriate	gr. 1/60
Soda benzoborate	gr. 1 1/4
Concentrated thymic sol.....	m. 2 1/2
Zinc sulfocarbonate	gr. 1/4
Oil of cassia.....	m. 1/16
Boroglyceride solution.....	m. 6 1/4
Gelatin, glycerin, q. s.	

Kaiser Pillen. (Pilulæ Imperiales.)

Various formulas are used for these, the most common one being

Resin of jalap.....	gr. 30
Resin of scammony.....	gr. 30
Gamboge	gr. 30
Aloes	gr. 30
Extract of colocynth.....	gr. 6
Soap	gr. 15
Gentian root	gr. 38

Water, to make 100 pills.

Sometimes calomel is added.

—Hager.

Kalendol. (148)

This is stated to contain 110 grains of acetanilid per ounce, also calendula, ichthyol, boric acid, and "imicition" a coal tar product with an iodine base.

Kali-Caffeine. (181)

This is a granular effervescent preparation described as containing in each dose of a heaping dessertspoonful 1 grain of caffeine bromid, 2 grains of potassium and sodium bromids with pure magnesium citrate.

Kalydor.

Bitter almonds, blanched..	av.oz. 10
Rose water.....	fl.oz. 50
Corrosive sublimate.....	gr. 5
Ammonium chlorid.....	av.oz. 3/4
Cherry laurel water.....	fl.oz. 1 1/2
Alcohol	fl.oz. 1 1/2

Mix an emulsion of the almonds and the rose water, strain, add the ammonium chlorid and cherry laurel water, and then the corrosive sublimate dissolve in the alcohol.—Nat. Dr.

Kasagra. (Flex. Casc. Sag. Aromat. Stearns.) (187)

This is described as a fluid extract of prime cascara sagrada, aromatized and sweetened. It is made by a special process. The product is stated to con-

tain about 2% of alcohol. It is recommended as a palatable preparation of cascara, owing its laxative effects to this drug alone.

Kastanol.

This is Fliegge's extract of horse chestnut, i. e., the active principle of horse chestnut, with about 8% of camphor. The preparation is made by a patented process, has some analgesic effect, and is to be employed by friction and painting in rheumatism, gout sciatica, and other chronic muscular pains, frost bites on the hands and feet, etc.

Kasucolum.

This is a name for potassium guaiacol sulfonate, also known as thiocol.

Katharol.

This is stated to be a solution of hydrogen peroxid.

Keating's Cough Lozenges.

These are said to be composed of

Lactucarium	dr. 2
Ipecac	dr. 1
Squill	gr. 45
Extract of licorice.....	av.oz. 2
Sugar	av.oz. 6
Mucilage of tragacanth.....	
.....to make a mass	

Make into 20-grain lozenges.—Cooley.

Keimol. (Liq. Keimol.) (106)

This is described as being prepared from phenyl salicylate and the active constituents of *Thymus vulgaris*, *Gaultheria procumbens*, and *Mentha piperita*.

Kelene. (77)

This is ethyl chlorid put up in special tubes, called "autospray," and intended for producing local anesthesia. The ethyl chlorid is also put up in these tubes in combination with cocaine, ichthyol, iodine, iodoform, menthol, resorcin, mercuric chlorid, formaldehyde, etc.

Kenyon's Antiseptic Powder Comp.

See Antiseptic Comp. Powder.

Kephalgine.

This consists, according to the American Journal of Pharmacy, of

Antipyrin	parts 5
Roasted coffee.....	parts 5
Caffeine	parts 2
Sodium salicylate.....	parts 2

Kephalopin.

This is an oily extract, prepared by cold process of the fresh nerve tissue of the brain. It is non-toxic and may be exhibited hypodermically. It is employed in nervous disorders, St. Vitus dance and epilepsy in doses of 5 cc.

Kepler Solution. (32)

This is described as a mixture of cod liver oil with Kepler malt extract. It is also put up in combination with hemoglobin, iron iodid, hypophosphites, pancreatin and phosphates.

Kern's Insect Annihilator.

The following is said to resemble this mixture (W. D.):

Deodorized benzin.....	fl.oz. 16
Oil of cedar.....	fl.oz. 1
Oil of wintergreen.....	fl.oz. 1

This composition is said to be certain destruction to cockroaches, bedbugs, fleas, ants, and other insects.

Kestin. (10)

This is stated to contain trinitrophenol, resorcin, ammonium chlorid, formaldehyde and orthoboric acid. It is used internally and externally.

Kickapoo Indian Oil.

This is stated to contain camphor, capsicum, gum myrrh, opium, oils of clove and sassafras, ether, alcohol and water. Of the alcohol it contains 60%, of the ether, 8 minims to each fluid-ounce, and of the opium, 11/20 grain to each fluidounce.

Kineurin.

This is a name for quinine glycerophosphate.

King's Dandelion and Quinine Bilious and Liver Pills.

These contain rhubarb, aloes and bitter aromatic extracts.—Geissler's analysis in H.

Kinsel's Tasteless Cod-Liver Oil Compound. (93)

This is stated to contain cod liver oil, extract of malt, compound syrup of hypophosphites and wild cherry.

King's Royal Germetour.

According to Slack's analysis, this was found to consist approximately of Saturated aqueous solution of

sulfuretted hydrogen.....	fl.oz. 1
Sulfuric acid.....	fl.oz. 2
Well or river water.....	gall. 1

Mix the acid with the water and add the sulfuretted hydrogen solution.

Klyne's Nerve Restorer.

The following is said to make a similar preparation (Dr. R. C. McCann):

Ammonium bromid.....	gr. 180
Potassium bromid.....	av.oz. 3
Potassium bicarbonate.....	gr. 70
Tincture of columbo.....	fl.dr. 6
Water	fl.oz. 6

—N. I.

Knight's Pills.

These are made from 6 parts of aloes, 3 of scammony and 1 of gamboge. Each pill weighs 4 grains.—H.

Koenig's Hamburg Breast Tea.

This is a mixture of licorice root, marshmallow root, red poppy flowers, mallow flowers, althea leaves, and the yellow flower of a stellaria.—H.

Kola-Stearns. (187)

Each fluidounce is stated to represent one troy ounce of fresh kola nut, being a specially aromatized fluid extract. It is used for the same purposes as kola nut and caffeine, the dose being $\frac{1}{2}$ to 1 teaspoonful 3 times a day.

Kola Digestive Tablets. (171)

These are stated to contain kola, sodium bicarbonate, pepsin and nuxvomica.

Kola-Koloid. (132)

This is stated to be "a pure wine of kola and coca combined."

Kolaton. (171)

This is stated to contain kola, cocoa, celery, "iodated" with burgundy wine.

Kondon's Catarrh Jelly.

On the package it is stated that this is composed of the following drugs only: Petrolatum, cocoa butter, menthol, oil peppermint, oil eucalyptus, oil lavender flowers, phenol.

Korpulin.

This is stated to contain the extracts of *Fucus vesiculosus*, *Tamarindus indicus* and *Cascara sagrada*. It is employed as an anti-fat preparation.

Koryl.

This is described as a compound of "orthophenol-sulphonborosalicylic acid with iodomenthol, 1%." It is a white powder reputed to be an antiseptic.

Koussein. (Brayerin.)

This is a yellowish-brown powder, soluble in alcohol, ether or chloroform, sparingly in water. It is used as an anthelmintic in doses of 15 to 30 grains, divided into 3 or 4 doses, given in powders or in pills, at intervals of half an hour, followed by castor oil.

Kresamine. (Trikesolamine.) (178)

This is an aqueous solution of 25% each of trikresol and ethylene-diamine. It is a clear, colorless liquid, miscible in all proportions with glycerin and soluble in about 4 parts of water, but insoluble in petrolatum. It is claimed to be a powerful bactericide with a minimum of toxicity. It is said to have great powers of tissue penetration and to act sedatively to inflamed tissues. It is recommended for the treatment of ulcers, eczema, lupus, and other skin affections in the form of solutions contained 2 to 25 parts of water; it may also be used in the form of ointment.

Kreso. (159)

This is a coal-tar product composed largely of cresols and the higher phenols. It is a dark brown, alkaline liquid, mixing readily with alcohol, chloroform or ether, but forming a whitish, emulsion-like liquid with water. It is a powerful antiseptic and is used, diluted with water, for disinfecting sick rooms, urinals, etc., it is recommended as a dressing for wounds, etc., on animals, and also as a parasiticide.

Kryofin. (Methoxy-Acetphenetidin.)

This is in white, odorless, tasteless crystals, soluble in 52 parts of boiling

water and 600 parts of cold water, freely soluble in alcohol, ether or fixed oils. It is recommended as an analgesic and antipyretic in doses of 4 to 8 grains. **Kuglolds.**

These are capsules containing glycerophosphate of quinine, eucalyptol and benzoate of creosote. They are imported from France.

Kumysgen. (167)

This is a preparation of powdered milk, used as a dietetic in convalescence and various diseases.

Kurin.

This is a mixture of compound licorice powder and phenolphthalein put up in tablet form.

Lac Bismo. (91)

This is a mixture said to consist of bismuth hydrate and subcarbonate, suspended in water, in a finely divided state, and containing $2\frac{1}{2}$ grains of the compounds in each fluidram. It is used as an antacid in doses of 1 to 4 teaspoonfuls.

Lac Bismuthi cum Pepsino. (142)

Each fluidounce is stated to contain Bismuth citrate (amorphous hydrate)gr. 16
Pepsin U. S. P. (as glycerole) gr. 16
With hydrochloric and lactic acids.

Lactated Pepsin.

Pepsin	av.oz.	1
Pancreatin	av.oz.	$\frac{3}{4}$
Diastase	gr.	28
Hydrochloric acid.....	m.	40
Lactic acid.....	m.	40
Milk sugar.....	av.oz.	5

Lactagol.

This is stated to be a dry extract of cottonseed which has been recommended as a galactagogue. It is yellowish, fine, light, inodorous powder, not soluble in water but readily mixing therewith.

Lactenzyme Elixir.

See Elixir Lactenzyme.

Lactenzyme Powder. (63)

This is stated to contain pepsin, pancreatin, ptyalin, diastase, lactic and hydrochloric acids, and milk sugar. It is

also put up in the form of 5-grain tablets.

Lactocresol. (15)

This is a dark, syrup liquid which becomes milky with water. It is a disinfectant derived from coal-tar, and is recommended for general sanitation and disinfection.

Lactol. (Lactonaphthol.)

This is a compound similar to benzonaphthol. It is a colorless, tasteless powder. In the system it is decomposed into lactic acid and betanaphthol, hence is used as an intestinal antiseptic in doses of 4 to 8 grains.

Lactone. (Buttermilk Tablets.) (159)

These tablets represent, in compressed form, a pure culture of lactic acid bacilli, which, when added to pure milk, makes a preparation like buttermilk but containing all the butter fat.

Lactopeptine. (145)

This is stated to contain pepsin, vegetable ptyalin, pancreatin, and lactic and hydrochloric acids. It is also put up in the form of tablets and various combinations with elixirs. See Elixir of Lactopeptine, etc., also Liquid Lactopeptine.

Lactophenin. (Lactylphenetidin.)

This differs from phenacetin in that the acetic acid group is replaced by the lactic acid group. It is in small, colorless crystals or white powder, odorless and slightly bitter, and soluble in 330 parts of cold water, 56 of boiling water, $8\frac{1}{2}$ of alcohol, and slightly soluble in ether. Its incompatibilities are the same as phenacetin. It is used for the same purposes as the latter, viz., as an antipyretic and analgesic in doses of 8 to 15 grains.

Lactoserve. (26)

This is a nutritive preparation for children made by souring pasteurized milk with lactic acid bacteria, evaporating to dryness, and mixing with sugar, flour and vegetable albumin. Mixed with water it forms an emulsion resembling buttermilk.

Lacto-Somatose. (Tannin Milk Albumose.)

This consists of casein albumose in organic combination with 5% of tannic acid. It is an odorless and almost tasteless yellowish powder, readily soluble in water and aqueous liquids. It is useful as a nutritive in diarrheas, inasmuch as it nourishes the system and at the same time acts as a mild astringent to the inflamed mucous surfaces.

Laird's Bloom of Youth.

This is stated to contain according to one analyst, 169 grains of zinc oxid to the fluidounce, no lead being present. According to another, it contains 32% of zinc oxid. According to another analyst it contains zinc oxid and precipitated chalk in perfumed water.

La-Kama.

This is a remedy for worms in children and adults which is put up in capsules in two forms—Weak, each containing $1\frac{1}{4}$ g. of kamala and $1/10$ g. of solid extract of pomegranate root bark; and strong, each containing $1\frac{1}{2}$ g. of kamala and $1/10$ g. of solid extract of pomegranate root bark.

Lamaroux's Pectoral Syrup.

According to Dorvault (in Hager), this is made from

Calf's lung.....	1
Red poppy flowers.....g.	300
Iceland moss.....g.	300
Jujubes	300
Dates	300
Licorice	300
Mallow flowers.....g.	200
Althea flowers.....g.	200
Violet flowers.....g.	200
Lungmoss	100
Extract of opium.....g.	2.4
Sugar	18000

Each 110 g. is stated to contain 1 centigram of opium extract.

Laminoids, Blaud's. (179)

Each tablet contains iron sulfate and sodium bicarbonate in quantities equivalent to Blaud's pills, but the two salts are separated into two layers so that the formation of ferrous carbonate will

occur only when the tablets are moistened, as when they are swallowed. An excess of bicarbonate is present to neutralize the acid in the stomach. They are made in two sizes, 5-grain and 3-grain. They are used in the same way and for the same purposes as Blaud's pills.

Langell's Asthma Remedy.

According to Hager this is composed of coarsely powdered belladonna leaves, moistened with 10% solution of potassium nitrate, and dried.

Lanichol.

A purified wool fat not differing essentially from adeps lanæ.—Coblentz.

Lanesin.

This is said to be mainly an ointment of wool fat with aluminum acetate and is recommended for insect bites, to prevent the swelling and relieve the itching.

Lanum. (130)

This is a brand name for a purified hydrous wool-fat.

Lapactic Pills. (182.a)

These contain each

Aloin	gr. $\frac{1}{4}$
Extract of belladonna.....	gr. $\frac{3}{8}$
Ipecac	gr. $1/16$
Strychnine	gr. $1/60$

Largin. (Silver Protalbin.)

This is a proteid-silver combination containing 11% of silver. It is a gray powder soluble in 10 parts of water, also soluble in glycerin, insoluble in alcohol or ether. It is a bactericide and astringent, used chiefly as an injection for gonorrhea in the form of $\frac{1}{4}$ to $1\frac{1}{2}$ % solutions. Internally it is sometimes given in doses of 5 to 8 grains. The solution should be dispensed in amber bottles.

Laroche's Quina.

See Quina-Laroche.

Larozé's Syrup of Orange Peel.

According to Hager, this is made from 15 parts of tincture of orange peel and 85 parts of simple syrup.

Lartigue's Gout Pills.

According to Wittstein, these weigh $2\frac{1}{4}$ grains and consist of 4 parts of powdered colchicum root and 1 of sugar besides the mucilaginous excipient.

According to Bouchardat, they are replaceable by pills made from the following:

Comp. ext. colocynth.....parts 20
Extract of colchicum.....parts 20
Extract of opium.....part 1

Laville's Anti-Gout Liquor.

According to Hager, these contain

Calcium chlorid.....g. 5
Chinoiding. 5
Extract of colocynth.....g. 2.5
Waterg. 85
Alcoholg. 100
Spanish wine.....g. 800

These are to be taken during the acute stage.

Laville's Preventative Pills.

According to Hager these are made from

Ext. of winter cherry berries..g. 15
Solution of sodium silicate...g. 5
Sugar and powdered marsh-mallow root, each.....sufficient

Divide into pills weighing 0.25 g. The above-mentioned extract is to be made from the berries by removing the seeds, kneading the berries with lime water and then extracting with alcohol.

Lavoline. 196)

This is described as a colorless, odorless and tasteless fluid petrolatum.

Lavoris. (114)

This is stated to contain zinc chlorid, cassia zeylanicum, formaldehyde, menthol, etc. It is an astringent and antiseptic used mostly by dentists.

Lazagrada. (89)

This is described as "bitterless cascara, a concentrated extract of selected bark."

Laxatina. (131)

This is described as a liquid laxative, each fluidram of which contains the active medicinal properties of 15 grains each of Alexandria senna and cascara bark, freed from their irritating and other objectionable constituents.

Laxan.

These are tablets containing 1/10 g. of phenolphthalein, coated with chocolate.

Laxative Cordial.

See Red Clover Compound.

Laxatol.

This is a name adopted for designating aromatic laxative tablets containing phenolphthalein. They are supplied in three strengths.

Laxinconfect.

This is the name applied to a compound of apple pulp and phenolphthalein. The dose is 1 to 3 grains.

Laxol.

This is described as pure castor oil, sweetened and flavored.

Lebel's Scordium Pills.

No. I.

Extract of germander.....g. 1
Extract of water germander...g. 1
Extract of yarrow.....g. 1
Water germander (scordium) powderg. 2

Divide into 25 pills.—H.

No. II have the same constitution but are exactly $\frac{1}{4}$ larger. They are used for piles, 3 or 4 pills being given 3 times a day.

Lebeuf's Coal Tar.

Coal tar.....part 1
Tincture of soap bark.....parts 2
Digest and filter.—H.

Lecin.

This is described as an iron albuminate compound which is said to contain in each liter 200 g. of egg albumin, 5 to 6 g. of iron in chemical combination, 80 g. of sugar, and 150 g. of alcohol, together with flavoring essences.

Lecithin.

This consists of oleic, stearic, palmitic, or other fatty acids with glycerophosphoric acid combined with cholin. It contains a greater proportion of phosphorus than any other nerve constituent. It occurs in combination with proteids in many animal and vegetable tissues, especially in nervous matter and egg-

yolk. It is best prepared from egg-yolk (in which it exists as vitellin) by dissolving out the lecithin with strong alcohol. It is a yellowish-brown, waxy solid, of peculiar odor, soluble in an equal volume of cold, absolute alcohol, readily soluble in chloroform, benzin, and fats, less readily in ether. It is insoluble in water but swells and decomposes on prolonged contact. It is hygroscopic on exposure to the air. It is incompatible with alkalies and should be kept in well-stoppered bottles protected from light.

It acts as a stimulant to nutrition and not as a direct nutrient. The number of red corpuscles and the amount of hemoglobin are increased, and the appetite is improved. Even in large doses it is not toxic. The ordinary diet contain 1 to 4 drams and some observers claim that the benefits of lecithin may be obtained by increased consumption of lecithin-containing foods (e. g. eggs). Lecithin is recommended for cases of faulty nutrition and is especially recommended as an addition to cow's milk for artificially fed infants. It may be given by mouth in doses of $1\frac{1}{2}$ to 8 grains per day, in pill form, before meals, or hypodermically 15 minims of a 5% solution in oil, daily. Infants are to receive one-third of these doses.

Lecithine Clin.

This is described as "phosphorus in the state of an organic natural compound," also as "natural lecithin extracted from the yolk of egg." It is put up in three forms: (1) Pills Clin, each one containing 5 cg. of lecithin; (2) Granulated Clin, each teaspoonful representing 5 cg. of lecithin; and (3) Solution Clin, which is sold in boxes of eight sterilized tubes of 1 cc. each, representing 5 cg. of lecithin. The last is for hypodermic use, an intramuscular injection of this oily solution being administered every 2 days.

Lecithine, Gare's.

See Gare's Lecithine.

Lecithin Glycerole.

Lecithin Solution. (70)

Each of these preparations is stated to contain 1 grain of pure lecithin to the fluidram. The menstruum in the former preparation is glycerin.

Lecithmedullin.

This is a lecithin preparation made from bone marrow. It has been recommended for cardiac disorders.

Lecithol. (14)

This is described as an emulsion of lecithin, each dram of which contains 1 grain of pure lecithin.

Lecitogen.

This is a combination of lecithin with cocoa, in the form of powder, containing 0.94% of lecithin.

Lehrer's Croup Powder.

Copper sulfate.

Sugar each, equal parts.

A few grains of this powder are to be blown on the diseased surface.

Leinol. (Emul. Ol. Lini Co.) (148)

This is described as a modified formula of Dr. Thomson's, and is stated to contain in each fluidounce:

Ol. lini, $33\frac{1}{3}\%$.

Acid hydrocyani, drops 4.

Sulph. codeine, gr. $\frac{1}{2}$.

Ol. cinnamon.

Chondrus, q. s.

Lemke's Electric Liniment.

This is stated to contain 62% of alcohol, and 3 minims of chloroform, 8 of ether and 1 grain of opium to the fluidounce.

Lenicet.

This is an anhydrous basic aluminum acetate. It is a fine, white voluminous powder, insoluble in water. It is used for hyperidrosis, mixed with talcum, or in ointment or paste form for treating wounds or ulcers, the dilution being 10 to 15%.

Lenigallol. (Pyrogallol Triacetate.) (109)

This is triacetylpyragallol obtained by replacing the hydroxyl groups with acetyl groups. It is a white crystalline

powder, insoluble in water but soluble with decomposition in warm aqueous alkaline solutions. It is said to be non-poisonous and non-irritating but a mild and painless corrosive. It was introduced as a substitute for pyrogallic acid in psoriasis, lupus, eczemas, etc. It is used in the form of a 5 to 10% ointment or paste in conjunction with zinc oxid.

Lenirobin. (Chrysarobin Tetracetate.) (109)

This is a powder insoluble in water but soluble in chloroform. It is used like chrysarobin and for the same purposes, and is said to be non-poisonous, non-irritating and non-staining.

Lentin. (130)

This is metaphenylendiamine hydrochlorid, recommended for diarrhea in children.

Leontin.

See Lloyd's Leontin.

Lepine.

An antiseptic solution said to contain

Mercuric chlorid.....	part 1
Bromin	parts 10
Benzoic acid.....	parts 50
Carbolic acid.....	parts 100
Salicylic acid.....	parts 100
Calcium chlorid.....	parts 50
Quinine hydrobromid....	parts 200
Chloroform	parts 200
Distilled water.....	parts 100,000

—Coblentz.

Lepine's Granules Hydrocotyle Asiatica.

Extract of Indian pennywort (Hydrocotyle Asiatica)	g. 5
Althea root.....	g. 2
Starch	g. 2

Divide into 100 pills.—H.

The extract is prepared by extracting the entire plant with 45% alcohol.

Lepine's Syrup Hydrocotyle Asiatica.

Extract of Indian pennywort (Hydrocotyle Asiatica)....	g. 1
Simple syrup.....	g. 500

Dissolve the extract in the syrup.—H.

Leprine or Leprotine.

This is an antitoxin prepared from the lepra bacillus which is used in the treatment of leprosy by subcutaneous injection in doses of 10 cc.

Lera's Solution Pyrophos. Iron and Soda.

According to Hager this is prepared from 10 to 12 g. of crystallized sodium pyrophosphate, 16 g. solution of ferrous sulfate of sp. gr. 1.317, and distilled water to make 1,000 g.

Letalbin. (Lecithin Albuminate.)

This is a compound of lecithin and albumin. It is a yellow powder containing 20% of lecithin. It is prescribed as a tonic like lecithin and glycerophosphates. The dose is 5 to 10 grains three times a day.

Leucogon Tablets. (160)

These are stated to contain sodium borate, ammonium chlorid, zinc sulfate, resorcin, tannic acid, ichthyol, eucalyptol, and hydrastine (white alkaloid). They are intended for use as vaginal suppositories. They are made round, weighing 30 grains each, pear-shaped, weighing 30 grains, and also round, weighing 15 grains.

Levulose.

See Diabetin.

Levurargyre.

This is a mercury nucleinate introduced from a French source.

Lianthral. (Extr. Olei Lianthracis.)

This is stated to be an extract of coal tar, which is used in various skin affections.

Libradol. (118)

This is in the form of an ointment or paste which is stated to contain "dracontium, sanguinaria, cephaelis, melaleuca, lobelia, laurus, capsicum, tobacco— $\frac{1}{4}$ grain alkaloids to ounce." It is recommended as an external remedy for colds, croup, acute inflammation of the lungs or soreness depending on congestion, for sore muscles and joints, etc.

Libradol, Mild is a milder form of the above which is intended for use on children.

Lignol. (81)

This is described as an oil distillate of lignite. It is recommended as an

antiseptic and germicide for various skin diseases, wounds and ulcers. It is also put up in the form of an ointment containing 20% of lignol, and as a soap containing 5%.

Lincoln's Hop and Celery Nerve Tablets.

These are stated to contain fluid extracts of lupulin, celery seed, cannabis indica, and capsicum.

Linogen.

This is a preparation recommended by Minde, there being two forms, liquid and semi-solid. The former is made from

Linseed oil	g. 35
Olein, white	g. 35
Spirit of ammonia	g. 20
Alcohol	g. 8
Ether	g. 2

This is made up also in combinations with iodine (6% and 10%), morphine, peru balsam, resorcin, veratrine, iodol, mercury, chloral hydrate, etc. The semi-solid form is made from

Linseed oil	g. 36
Paraffin	g. 24
Olein, white	g. 30
Spirit of ammonia	g. 10

This forms a light yellow, soft ointment which is capable of absorbing several times its weight of water.

Linonine. (Emulsio Lini Comp.)

This is stated to be an emulsion of linseed oil combined with iron hypophosphate, marshmallow, dilute hydrocyanic acid, chondrus, glycerin, and oils of eucalyptus and wintergreen.

Lipiodol.

This is the same as lipobromol (which see), but contains 40% of iodine.

Lipobromol.

This is a brominated oil intended as a substitute for bromide salts. It is a transparent, yellowish liquid of a slight odor of poppy oil from which it is prepared and containing 33⅓% of bromine. It is given per mouth and subcutaneously, the dose being 15 to 60 grains.

Liquid Cathartic. (36)

This is stated to combine pure sodium sulfate with the active principles of Alexandria senna.

Liquid Febrisol.

See Febrisol Liquid.

Liquid Hæmoferrum.

See Hæmoferrum.

Liquid Hypophosphites Lime and Soda. (137)

This is stated to contain in each teaspoonful 2 grains each of the hypophosphites of lime and soda.

Liq. Hypophosphitum, Schlotterbeck's.

See Solution of Hypophosphites.

Liquid Lactopeptine.

Each fluidounce is stated to represent 38 grains of lactopeptine (which see), in a glycerin menstruum with alcohol, 3%.

Liquid Peptonoids. (13)

This is stated by the manufacturers to contain

Proteids (peptones and propeptones)	5.25%
Lactose and dextrose	11.3 %
Cane sugar	2.5 %
Mineral constituents (ash) ..	0.95%
Alcohol (by volume)	17.5 %

Liquid Peptonoids with Cascara.

See Cascara Peptonoids.

Liquid Peptonoids with Coca.

Each fluidounce is stated to represent

Coca leaves	gr. 10
Proteids (peptones and propeptones)	5.25%
Lactose and dextrose	11.3 %
Cane sugar	2.5 %
Mineral constituents (ash) ..	0.95%
Alcohol	16.5 %

Liquid Peptonoids with Creosote.

Each tablespoonful is stated to represent

Beechwood creosote	m. 2
Guaiacol	m. 1
Proteids (peptones and propeptones)	5.25%
Lactose and dextrose	11.3 %
Cane sugar	2.5 %
Mineral constituents (ash) ..	0.95%
Alcohol	12 %

Liquid Somatose.

This is a preparation of somatose, which see. It is put up in two forms, sweetened and unsweetened. The former has a mild aromatic taste, the latter is preferred when the use of sugar is objectionable. The dose for adults is 1 dessertspoonful to a tablespoonful, children, 1 to 2 teaspoonfuls, according to age.

Liquid Taka-Diastase. (159)

Each fluidounce is stated to contain 20 grains of taka-diastase.

Liquocide.

This is a new name for Liquozone, which see.

Liquor Ambrosia (Curtis.) (76)

Each fluidram is stated to contain 5 minims of the fluid extract of the leaves of *Ambrosia artemisiæfolia*. It is recommended for hay fever.

Liquor Antisepticus, Volkmann's.

A solution supposed to contain alcohol, part 1; water, parts 10; and glycerin, parts 20.—Coblentz.

Liquor Aromaticus.

This is said to be a mixture of oils of lavender, clove, cinnamon, thyme, lemon, mace, and bergamot with alcohol.

Liquor Diastos. (141)

Each fluidounce is stated to contain
 Pepsin (1:3000).....gr. 4
 Papaingr. 1.36
 Renningr. 0.68
 Diatasegr. 0.09
 Pancreatingr. 0.23
 Nitrohydrochloric acid, dil.....m. 5
 Lactic acid.....m. 0.5
 Nux vomica.....gr. 0.45

Liquor Ferri-Mangan. (141)

This is stated to contain 0.6% of iron in the form of peptonate and 0.1% of manganese. Elsewhere it is also stated that each fluidounce contains 20 grains of iron peptonate and 4 grains of manganese sesquioxide.

Liquor Ferri-Mangan Comp.

This is stated to contain 0.6% of iron, 0.1% of manganese, and 1/64 grain of

strychnine sulfate and 1/16 grain of strontium arsenite.

Liquor Ferri Mangan Comp. with *Cascara* is the same as the above but represents in addition 40 grains of *cascara sagrada* to the fluidounce.

Liquor Ferro-Mangan Aromaticus. (Urban) (Aromatic Elixir Peptonate of Iron and Manganese.) (111)

This is described as a neutral peptonized solution of iron, 0.42%, and manganese, 0.07%, combined with aromatics.

Liquor Ferro-Mangani Bromopeptonati "Dieterich."

See Bromo-Mangan.

Liquor Ferro-Mangani Peptonati "Dieterich."

See Ferro-Mangan Dieterich.

Liquor Hepatica. (31)

Each fluidounce is stated to contain 5 drams of sodium phosphate, 48 minims of tincture of iron chlorid, and aromatics.

Liquor Lappæ Comp. (160)

Each fluidounce is stated to contain
 Detan. solution calisaya.....m. 350
 Detan. burdock root.....m. 50
 Detan. elixir cascara.....m. 50
 Arsenic iodid.....gr. 1/50
 Combined iodids.....gr. 7½

The latter consist of the iodids of potassium, sodium, ammonium, calcium, manganese and iron.

Liquor Pancreaticus. (132)

This is described as an active solution of the digestive ferments of the fresh pancreas.

Liquor Sedans. (159)

Each fluidounce is stated to represent
 Black haw.....gr. 60
 Hydrastis (represented by the white alkaloid).....gr. 60
 Jamaica dogwood.....gr. 30
 Aromatics.

It is recommended as a utero-ovarian sedative and anodyne.

Liquor Sedans with Cascara.

This is similar to the preceding but contains in addition 40 grains of *cascara sagrada* to the fluidounce.

Liquor Tritici. (Liquor Tritici Concentratus.) (159)

This is described as a solution of which each 15 minims represents 27 grains of couch grass in a menstruum containing 23½% of alcohol. It is made by exhausting the drug with water concentrating the percolate in vacuo, and preserving the product by the addition of 23½% of alcohol. It is used as a diuretic in doses of 1 to 4 fluidrams given every 2 to 4 hours.

Liquor Uterans. (207)

According to the manufacturers, each fluidounce represents

Black haw.....	gr. 55
Blue colosh.....	gr. 28
Jamaica dogwood.....	gr. 25
Hydrastis (represented by the white alkaloid).....	gr. 55
Aromatics.	

Liquozone.

According to Dr. Kebler, this consists virtually of a solution of sulfur dioxide in water. Other chemists seem to confirm this analysis.

Listerine. (113)

This is described as "the essential antiseptic constituent of thyme, eucalyptus, baptisia, gaultheria and mentha arvensis, of each, 1 part; especially prepared boric acid, 29 parts; benzoic acid, 1 part; rectified spirits, 250 parts; water to make, 1,000 parts."

Lithiated Hydrangea Comp. (113)

This is stated to represent the active properties of fresh Hydrangea arboreas, Berberis aquifolium, and Scrophularia nodosa, together with benzoate and salicylate of lithia.

Lithiated Sorghum Comp. (182a)

Each fluidounce is stated to contain 120 grains of a combination of broom-corn seed, corn silk, saw palmetto, and hydrangea, together with 16 grains of lithium benzoate and citrate.

Lithium Arrhenal.

This compound is analogous to the sodium compound which is described under Arrhenal, which see. It is in deliquescent crystals which are soluble in

water. The dose is 1 to 3 grains twice daily.

Lithium Ichthyol.

This is a lithium derivative of ichthyol. It is a dark brown mass quite similar to ammonium ichthyol in appearance but is more dense. It is an antiseptic and bactericide, and is recommended as an antiseptic application for wounds and in syphilis.

Lithium Tonol. (178)

This is a name given to lithium glycerophosphate.

Litholine.

This is petrolatum or petroleum jelly.

Lithona. (181)

This is described as a combination of salts of lithia with mild saline laxatives.

Lithos. (141)

This consists of effervescent tablets of lithium and sodium salicylates, each containing ½ grain of the latter. It is also put up without the salicylate.

Lithyol.

This is a preparation somewhat similar to ichthyol.

Lloyd's Hydrastis.

This is described as a hydrastis preparation from which is excluded the coloring matters of the drug and other undesirable constituents.

Lloyd's Leontin.

This is a 1% solution of leontin, according to the manufacturers' statement, leontin being the active emmenagogue principle of Caulophyllum thalictroides.

Sugar	gr. 120
Starch	gr. 120
Acacia	gr. 60
Lactucarium	gr. 15

Also mix equal parts of vinegar and oxymel of squills and wine of ipecac; evaporate to one-sixth of the original bulk, add to the powder in sufficient quantity to make a mass, and divide into lozenges of 7½ grains each.

Lofotal.

This is the name given to cod liver oil impregnated with carbon dioxide. The

contained carbonic acid gas is said to hide the taste of the oil and preserve it by preventing oxidation.

Lofotin.

This is a so-called hydroxyl-free steamed cod liver oil. It is also put up with .01% of phosphorus.

Loretin. (Metaiodoorthoxyquinoline-sulfonic Acid.)

This is a yellow, inodorous, crystalline powder, sparingly soluble in water and alcohol, insoluble in ether and oils, but forming emulsions with ethereal and oily fluids (particularly with collodion). It is used externally as a substitute for iodoform. It contains 36% of iodine. It is also used internally in doses of 3 to 8 grains.

Losophan. (Triiodometacresylic Acid

Locock's Pulmonic Wafers.

—Tri-Iodo-Cresol.)

This is in white needles, which are easily soluble in ether, chloroform and warm fixed oils, sparingly soluble in alcohol, insoluble in water.

It is used externally as an antiparasitic in 1 to 2% hydroalcoholic (1 of water, 3 of alcohol) solution, or 1 to 3% ointment.

Lotio Cinchonæ Comp. (142)

This is a preparation containing oleates of the alkaloids of cinchona, 15 grains to the ounce, 5 grains of this being quinine; the oleates are dissolved in amylic alcohol. It is applied externally when cinchona or quinine cannot be taken by the mouth as in night sweats of phthisis, etc. It is also applied externally in eczema and seborrhea and other diseases of the scalp and skin.

Lotio Pancreatis. (70)

This is described as "an extract of the pancreas of great trypsin strength, containing likewise all the soluble gland constituents in an active form." It is designed for topical application to cancers, ulcers, carbuncles, etc.

Loxalotio.

See Lotio Cinchonæ Comp.

Lubraseptic. (176)

This is a jelly prepared from Irish moss, containing 2% of boric acid and 0.067% of formaldehyde. It is a colorless, transparent jelly almost completely soluble in water. It is claimed to be absolutely sterile. It is said to be a disinfectant which is non-irritating to the skin or mucous membranes. It is claimed to be useful as a lubricant for the fingers or for surgical instruments and as a dressing for burns or slight abrasions.

Lubri-Chondrin. (201)

This is a gelatinous substance obtained from Irish moss with the addition of oil of eucalyptus and formaldehyde. It is used as a surgical lubricant.

Lubrikol. (86)

This is a soluble surgical lubricant stated to be made from Irish moss with the addition of oil of eucalyptus and formaldehyde.

Lucilline.

This is the name for a brand of purified petrolatum.

Luperine.

This is a mixture of powdered columbo, gentian and quassia.—Coblentz.

It is used as a remedy against dipsomania.

Lutein.

These are tablets said to contain 5 grains of the dried yellow substance of the ovaries of the cow.

Lycetol. (Dimethylpiperazine Tartrate.)

This is a white, odorless powder, slightly hygroscopic, and easily soluble in water, forming an agreeably acedulous solution. It is incompatible with alkalis which liberate the insoluble base. It is claimed to be a diuretic and uric acid solvent superior to piperazine. It is said to be well borne by the stomach. The dose is 5 to 10 grains 3 times a day well diluted with water, preferably carbonated water, which may be sweetened with sugar if desired.

Lygosine. (Sodium Lygosinate.)

This is a condensation product of salicylaldehyde and acetone. It crystallizes in glossy, greenish prisms, soluble in about 16 parts of water at the ordinary temperature. This solution is ruby red in color, is not decomposed by boiling, and will remain stable for some time if kept in a cool place; acids, however, decompose it. This is used as an antigonorrheic remedy in place of silver salts, being suitable for male or female. Being non-irritant, it may be used in solutions of greater strength than may be used of silver salts. It is used in solutions of 5% strength.

Lygosine-Quinine.

See Quinine Lygosinate.

Lymph-Orchitic Fluid Compound. (Roberts-Hawley Lymph Comp.) (144)

The following formula is given by the manufacturers in their advertisements:

Lymph and lymph gland extracts (young goats).
Orchitic fluid (goats and bulls).
Brain and cord extracts (emulsions).
Chlorid of Au and Na (1/40 gr. to 10 minims).
Menstruum (described in literature).

Lymphoids. (82)

These are 5-grain tablets which are stated in the advertisement to contain

Ext. testes and lymph (containing spermine and nuclein)	gr. 2
"Phosphine" of zinc.....	gr. 1/20
Ext. nux vomica.....	gr. 1/8
Ferrous carb. mass (Blaud's).....	gr. 1
Aloin	gr. 1/20
"Bovis pulv.," q. s. ad.....	gr. 5

Lyptol. (12)

This is an antiseptic ointment which is stated to be made from "hydrargyri bichloridi, oleum eucalyptus, formalin, and benzo-boracic acid, combined with a perfectly sterilized petroleum base."

Lysan.

This antiseptic and disinfectant is obtained by the action of formaldehyde on certain terpenes, and allied substances (such as eucalyptol, menthol, eugenol,

etc.), and then dissolving the reaction product in diluted alcohol. The preparation is miscible in all proportions with water, glycerin, and alcohol, has a pleasant odor both when concentrated and when diluted, is quite stable, does not attack steel or nickel instruments, and is said to be but slightly toxic. It is used in from 0.5 to 10% solutions for disinfecting the hands, rooms, removing odors, sterilizing instruments, etc.

Lysargine.

This is a name for colloidal silver.

Lysidine. (Ethylene-Ethenyl-Diamine.)

This is a bright red crystalline mass, which on account of its extreme hygroscopic nature is marketed only as a 50% solution. This is a pale yellowish liquid. It is recommended as a diuretic and is recommended as a solvent of uric acid because it forms a very soluble compound with the latter and will facilitate its elimination from the system. It is claimed to be superior to piperazine. It is used for gout, lithiasis, etc. The dose is 15 to 75 minims, largely diluted in water, preferably carbonated water.

Lysoform.

This is a perfumed saponaceous liquid containing formaldehyde. It is a clear, yellowish, oily liquid, soluble in all proportions of water and alcohol. It is used as a disinfectant and deodorant, especially of the hands, in 2 or 3% dilutions.

Lysol.

This is a saponaceous solution containing 50% of cresols. It is a brown, oily liquid, soluble in water, alcohol and glycerin. It is disinfectant and antiseptic and is used as a dressing for wounds and injuries in 1/2 to 1% solutions and in 2 to 4% solutions for disinfecting the hands and surgical instruments.

Lysulfol.

This is the name given to a compound of sulfur, lysol and soap, containing 10% of sulfur. It is a black semi-fluid readily soluble in water.

Lytrol.

This is said to consist of 20% of beta-naphthol in an alcoholic solution of potassa soap.

MacAlister's Cough Mixture.

This is stated to contain in each fluidounce

Morphine sulfate	gr. 3/4
Extract cannabis indica.....	m. 7 1/2
Chloroform	m. 11 1/4

Magee's Emulsion.

This is stated to contain cod-liver oil, diastasic extract of malt, and hypophosphites of sodium and calcium.

Magnesiathal (Lac Magnesii Hydrati.) (142)

This is stated to contain 8% of magnesium hydrate in aqueous suspension.

Magnesium Dioxid.

For preparations containing it, see Biogen and Magnesiumperhydrol.

Magnesiumperhydrol. (130)

This is a magnesium peroxid, which occurs as a white powder, insoluble in water, and containing 15 to 25% of magnesium peroxid (MgO_2) and 75 to 85% of magnesium oxid (MgO). It is recommended for internal use as a disinfectant and oxidizer in abnormal gastric and intestinal fermentative processes. It is given in doses of 1/2 to 1 teaspoonful 3 or 4 times a day.

Magnesium-Tonol. (178)

This is a name for magnesium glycerophosphate.

Maizavena. (131)

Each fluidram is stated to represent	
Saw palmetto (fresh berries)	gr. 15
Maizenic acid (from fresh corn silk)	gr. 1/10
Avenine (from oats).....	gr. 1/64
Oil santal	m. 3

Maizine.

This is an albuminoid principle derived from corn flour. It is a light, white powder, insoluble in water, soluble in alcohol and in acetone. It is recommended as a coating for pills intended to dissolve only in the intestines, thick alco-

holic solutions (40% or more) being used for this purpose.

Maizo-Lithium. (97)

This is described by the manufacturers as "a nascent chemic union of maizenic acid, obtained from green corn silk, with the alkaline base lithium, forming maizenate lithium, of which the mother liquid carries 2 grains to each drachm." It is recommended for genito-urinary diseases.

Malakin. (Salicyl-paraphenetidin.)

This is in fine bright yellow needles, which are soluble in hot alcohol and in solutions of alkaline carbonates, slightly soluble in cold alcohol, insoluble in water. It is an antipyretic and analgesic, like antipyrine, and is also recommended as a tenifuge. The dose is 8 to 15 grains several times daily.

Malarin. (Acetophenone-phenetidin.)

This is in yellow needles of slightly acid taste. It is insoluble in water, slightly soluble in cold alcohol, readily soluble in hot alcohol and ether. It is an antipyretic and analgesic, the dose being 8 grains 2 or 3 times a day.

Malix.

This is a proprietary dietetic preparation supposed to consist of diastasic extract of malt dissolved in grape juice.—W. D.

Mallein.

This is a serum used for diagnosing glanders in horses. It is marketed in the liquid as well as in the dry forms.

Maltine.

This is stated to be prepared from equal parts of malted barley, oats and wheat, presumably in the usual manner for making malt extracts. It is put up in various combinations such as the following:

With Cascara Sagrada:

This is stated to contain the extract of 60 grains of cascara sagrada to each fluidounce.

With Coca Wine:

Each fluidounce is stated to represent the virtues of 30 grains of coca.

With Cod Liver Oil:

This is stated to contain 30% of cod liver oil and 70% of maltine, both by volume.

With Creosote:

Each fluidounce is said to contain 4 minims of creosote.

Ferrated:

Each fluidounce is stated to contain 8 grains of iron pyrophosphate.

With Hypophosphites:

Each fluidounce is stated to contain 3 grains each of the hypophosphites of lime and soda and 2 grains of iron hypophosphite.

With Peptones:

This is described as a combination of digested beef with maltine.

With Pepsin and Pancreatin:

Each fluidounce is stated to contain pepsin equal to 40 grains of saccharated pepsin and 15 grains of pancreatin.

With Phosphate Iron, Quinia and Strychnia:

This is claimed to contain 4 grains of iron pyrophosphate, 1 grain of quinia, and 2/75 grain of strychnia, to each fluidounce.

With Wine of Pepsin:

Each fluidounce is stated to contain diastase sufficient to render digestible 12 ounces of starch and pepsin sufficient to render digestible 6 ounces of albumen.

Maltobeef. (99)

This is stated to be an emulsion of cod liver oil containing the hypophosphites of lime, soda and potassa and the extracts of malt and beef.

Malto-Fer. (Vinum Malti et Cinchonæ Ferratum.) (142)

Each fluidounce is stated to represent: Malt, as extractive, 120 grains; cinchona calisaya, as aqueous extract, 16 grains; iron, as maltose iron, 2 grains; combined with wine.

Maltosikat.

This is the name given to a malt extract in powder form.

Maltole. (79)

This is a preparation of cod liver oil with malt extract.

Maltopepsine. (194)

This is stated to contain sugar of milk, "nutritives of the grain," dioscorein, pepsin, diastase, and lactic, nitromuriatic and phosphoric acids.

Maltopepsine Elixir.

Each fluidram is stated to contain 10 grains of maltopepsine.

Maltopepsin Elixir with Glycerophosphates.

Each fluidram is stated to contain

Sodium glycerophosph.....gr. 2

Calcium glycerophosph.....gr. 1

Iron glycerophosph.....gr. 3/16

Manganese glycerophosph...gr. 1/8

Strychnine glycerophosph...gr. 1/64

Elixir of maltopepsine, q. s.

Malto-Yerbine.

Each fluidounce is stated to contain the active principles of 30 grains of yerba santa.

Maltzyme. (125)

This is "a diastasic essence of malt, extracted and concentrated by a new process." It is put up plain and in combinations as follows:

With Cascara Sagrada:

Each fluidounce represents 45 grains of cascara.

With Cod Liver Oil:

Contains 25% by volume of cod liver oil.

With Hypophosphites:

Each fluidounce is stated to contain

Calcium hypophosphitegr. 4

Potassium hypophosphitegr. 4

Ferric hypophosphitegr. 1/4

Manganese hypophosphitegr. 1/4

Ferrated:

Each fluidounce is said to contain 8 grains of iron pyrophosphate.

With Phosphate of Iron, Quinine and Strychnine:

Each fluidounce is stated to contain 4 grains of iron pyrophosphate, 1 grain of quinine, and 2/75 grain of strychnine.

With Yerba Santa:

Each fluidounce is stated to represent 30 grains of yerba santa.

Mandrake Compound. (17)

This is stated to contain podophyllum, leptrandra, apocynum, cannabinum, berberis vulgaris and chionanthus.

Manganauro. (Solution of Bromid of Gold, Arsenic and Manganese.)

Ten drops of this are stated to contain $1/32$ grain each of gold and arsenic bromids, and $1/2$ grain of manganese bromid.

Manganese-Tonol. (178)

This is a name for glycerophosphate of manganese.

Manola. (126)

According to an advertisement, this is stated to contain the cell or tissue phosphates (calcium, magnesium, sodium, potassium and iron), all dissolved in Madeira wine. According to another advertisement, this preparation contains besides these phosphates, "gaduline" (the active principle of cod liver oil), cinchona, coca, and the extract of "mano nut."

Maretin.

This is a methylated acetanilid in which the acetyl group is replaced by urea. It is in white, glistening crystals, sparingly soluble in water (1 in 1050), more soluble in alcohol (1 to 95). It is used as an antipyretic in doses of 3 to 5 grains.

Marienbad Pills.

This formula was contributed to Pharm. Centralh. by the reputed originator and given by him as the original formula:

Extract of fucus marinus...	parts 16
Salt of the Marienbad,	
natural	parts 4
Sodium taurocholate	parts 2
Ingluvin	part 1
Castoreum, Russian	part 1
Extract of cascara sagrada,	
powder	sufficient

Make into pills weighing $3\frac{1}{2}$ grains each, and coat with silver leaf.

Many other formulas have been given for these pills, purporting to furnish products the same as, or similar to, the original. Several of these formulas are in Hager's and Dieterich's works.

Marina.

This is a sterilized and carbonated sea water, used in place of the usual physiological salt solution.

Markasol. (112)

This is defined as bismuth borophenate; and is a white powder of the odor of camphor. It is intended as an antiseptic dry dressing for wounds, ulcers, burns, etc.

Marmorekin.

This is Marmorek's antistreptococcus serum.

Marrol.

This is said to consist of ox marrow, malt extract, and hop extract.—Coblentz.

Marshall's Catarrh Snuff.

According to Hager, this consists of tobacco and leaves of Glechoma hederaceum, asarum, etc., the whole perfumed with oil of eucalyptus and traces of other oils.

Marshall's Pills.

Comp. ext. of colocynth.....	gr. 60
Mass of mercury.....	gr. 60
Rhubarb	gr. 60
Aloes	gr. 60
Soap	gr. 60

Make 60 pills.—Ph. Rec.

Marsitriol.

This is a name for iron glycerioarsenate. It is a yellowish, amorphous powder. The dose is $1/6$ gram 3 times a day.

Maukalan.

This is an ointment-like substance used in veterinary practice, which contains thigenol as its active ingredient. It is recommended for saddle-gall, inflammations and malanders.

McArthur's Syrup of Hypophosphites Comp.

This is stated to contain $12\frac{1}{2}$ centigrams of the hypophosphites of lime and

soda to each teaspoonful, combined with a neutral syrup. It is said to be made according to the formula of Dr. Churchill of Paris.

McClure's La Grippe Tablets. (181)

These are made to contain each
Sodium salicylategr. 2
Acetanilidgr. $1\frac{1}{2}$
Cerium oxalategr. $\frac{1}{2}$
Citrated caffeinegr. $\frac{1}{2}$

MacDougall's Disinfecting Powder.

This is said to be prepared by adding crude carbolic acid to sodium sulfite.—Frerksen.

McMunn's Elixir of Opium.

The manufacturers claim that it contains all the valuable medicinal properties of opium in natural combination, to the exclusion of all its noxious, deleterious or useless principles.

Meatox. (127)

This is described as a granulated dry beef, free from preservatives.

Mecca Compound. (75)

This is stated to be composed of menthol, thymol, boracic acid, pyroligneous acid, carbolic acid, and eucalyptol, "combined in a plastic base of purified and prepared petroleum."

Medicora. (Vaginal Pessaries of Solidified Glycerin.) (186)

Each pessary is stated to contain 3 grains of ichthyol, 5 grains of lead carbonate, 3 grains of zinc sulfate, 1 grain of extract of belladonna, and 5 grains of "fluid hydrastis" (yellow).

Medicamentum.

Same as Haarlem Oil, which see.

Medullary Glyceride.

This is the same as Extract of Red Bone Marrow, which see.

Medulline. (213)

This is an extract of the spinal cord.

Melachol. (4)

This is put up in two forms, liquid and an effervescent tablet form. The liquid is stated to contain 85 grains of "phosphates" with "nitrates" of sodium,

85 grains to the fluidram. The tablets are said each to contain 35 grains of "phosphates" with "nitrates" of sodium.

Melioform.

This is a disinfectant which is said to be represented by the following formula, according to Zerneke (in Ch. & Dr.):

Formaldehydeg. 25
Solution of aluminum acetate.g. 15
Boraxg. 2.5
Glycering. 0.3
Waterg. 100.

Color red and flavor with bergamot.

Mel-Maroba. (182a.)

This is described as a palatable blending of manaca, caroba, and stillingia, a fluidounce representing 120 grains of the combined drugs, together with 16 grains of potassium iodid.

Mentho-Eucalyptol.

This is stated to be composed of menthol, thymol, eucalyptol, baptisia, gautheria and "benzo-boracic acid" with 25% cologne spirits.

Menthoxol.

This is a 3% hydrogen peroxid containing 1% of menthol. It is used as an antiseptic application.

Menthyseptic. (198)

This is stated to be composed of thymol, menthol, eucalyptol, methyl salicylate, and boric and benzoic acids.

Mentone. (88)

A name given to unférmented grape juice.

Mercatone. (63)

Each 10 minims is stated to contain

Mercury bromidgr. $1/32$
Gold bromidgr. $1/32$
Arsenic bromidgr. $1/32$

Mercauro. (Solution of Gold, Arsenic and Mercury Bromids.)

Ten drops are stated to contain $1/32$ grain each of gold, arsenic and mercury bromids.

Mercuran. (69)

This is an ointment containing 50% of mercury in goose fat stearin. It is put up in 4 g. capsules, the contents of each capsule being sufficient for one inunction.

Mercuralin Eye Salves. (153)

These are stated to contain mercuric oxid and adrenalin. No. $\frac{1}{4}$ contains $\frac{1}{4}$ grain of yellow oxid of mercury and $\frac{1}{400}$ grain of adrenalin to a dram; No. $\frac{1}{2}$ is the same but contains $\frac{1}{2}$ grain of yellow oxid of mercury; and No. 1 is the same but containing 1 grain of the yellow oxid. Mercuralin Compound is the same as No. $\frac{1}{2}$ with the addition of $\frac{1}{3}$ grain of atropine sulfate.

Mercolint.

These are chest pads, made by Beiersdorf, impregnated with mercurial ointment. They are used by syphilitics. They are made in three strengths, according to the amount of mercury they contain.

Mercuramalgam. (Mercuriol.)

This is said to be an amalgam of mercury with aluminum and magnesium, combined with chalk. It is a gray powder containing 40% of mercury. It is used both internally and externally.

Mercurial Embrocine. (21)

This consists of $\frac{1}{3}$ of metallic mercury and $\frac{2}{3}$ of a mixture of benzoinated lard and soap.

Mercuricide Ointment, Eskay's.

This is described as containing 1 part of mercuric iodid as lithiomeric iodid in 1000 parts of aluminum silicate and lanolin, the whole being odorized with thymol. It is put up in 5-ounce ointment pots. This mercury compound is said to possess properties which make it superior to corrosive sublimate as a disinfectant. The ointment is recommended for various skin diseases, especially those of an eczematous character.

Mercur-Iodo-Hemol.

This is hemol (which see) combined with 12.4% of mercury and 28.6% of iodine. It is a brown powder, used as an antisiphilitic. The dose is 2 to 5 grams 3 times daily in the form of pills.

Mercuriol.

See Mercuramalgam.

Mercurods. (136)

These are urethral crayons, each one of which is stated to contain $\frac{1}{50}$ grain of mercuric iodid, $\frac{1}{8}$ grain of zinc iodid, $\frac{1}{4}$ grain of lysol, $\frac{1}{2}$ grain of extract of henbane, 1 grain of antipyrin, and 2 grains of fluid hydrastis. They are recommended for gonorrhea and urethritis.

Mercurol. (Mercury Nucleinate.) (159)

This is a compound of mercury with nucleinic acid from yeast, containing 10% of metallic mercury. It is a brownish powder, soluble in water, especially in warm water, insoluble in alcohol. It does not coagulate albumin. It is said to be a non-irritant. It is used for gonorrhea, chronic conjunctivitis, blepharitis, syphilis etc. It has marked bactericidal power and possesses the pharmacologic action of soluble mercury compounds. It is given in doses of $\frac{1}{2}$ to 3 grains three times a day and locally in $\frac{1}{2}$ to 5% solutions.

Mercurocreme.

This is described as a neutral potassium stearate containing one-third mercury and dissolved in glycerin. It is used locally as a substitute for mercurial ointment.

Mercurovanillin. (Mercuric Vanillate.)

This is a compound containing 40% of mercury. It is a white, tasteless powder, insoluble in water and weak acids and of the odor of vanilla. It is used in syphilis.

Mercury Anilate.

This is a white, odorless and tasteless powder containing 52% of metallic mercury. It is insoluble in water. It is applied by inunction in the form of a 35% ointment in syphilis; to sores it is applied as a $\frac{1}{2}$ to 3% ointment. Internally it is given in doses of $\frac{1}{4}$ grain. It is also used by intramuscular injections, rubbed up with paraffin oil.

Mercury Cyanid.

This is in colorless, odorless, transparent prisms, which are darkened by light and hence should be kept in a dark place or in amber-colored bottles. It is soluble in 13 parts of water and in 15 of alcohol. It has the same properties as corrosive sublimate, but is preferred to the latter because much less irritating. The dose is $1/12$ to $1/6$ grain 3 to 5 times a day.

Mercury Glycolate.

This is a compound obtained by dissolving mercuric oxid and glyocol together in hot water. It is used as an intramuscular injection for syphilis.

Mercury Oxycyanid.

This is a white, crystalline powder soluble in hot water. It is used in place of corrosive sublimate because it is less irritating and is more active as a germicide. It is used in 0.2 to 2% aqueous solutions.

Mercury Salicylate.

This is a white powder containing 59% of mercury. It is insoluble in water and alcohol, but soluble in solutions of sodium chlorid and in dilute alkalies. It is used for syphilis and gonorrhea. It is applied as a 1% powder or ointment and is used as an injection in a 1 to 300 mixture with a little acacia. Internally it is stated to be well borne by the stomach and not causing salivation. The dose is $1/3$ grain.

Mercury Succinimide.

This is a white powder soluble in about 25 parts of water, slightly soluble in alcohol. It is considered by many as the most eligible compound of mercury for hypodermic or intramuscular administration. This is a good formula: Mercury succinimide, 2.5; cocaine hydrochlorid, 1.0; distilled water, 50. 1 cc. of this solution is used for an injection

Mercury Tannate.

This is a greenish brown powder containing about 50% of mercury. It is insoluble in all ordinary solvents. It is used as an antisyphilitic in doses of 1 to 2 grains.

Mercury Thymolacetate.

This is in colorless crystals insoluble in water. It is used by intramuscular injections for syphilis, $1\frac{1}{2}$ grains mixed with liquid paraffin or glycerin being injected every third or fifth day.

Merrell's Vaginal Discs.

Powdered ext. of helonias...	gr. 12
Powdered ext. of hydrastis...	gr. 12
Powdered ext. of henbane...	gr. 6
Powdered opium	gr. 6
Eucalyptol	gr. 11
Thymol	gr. 11
Gallic acid	gr. 12
Boric acid	gr. 36
Tannic acid	gr. 24
Alum	gr. 36

Make into 12 compressed tablets.

Mesotan. (Ericin.)

This is the methyloxymethyl ester of salicylic acid, analogous to oil of wintergreen. It contains 71% of salicylic acid. It is a clear, yellowish, faintly aromatic, oily liquid, sparingly soluble in water, readily miscible with alcohol, ether, chloroform, and fixed and volatile oils. It is applied externally in cases of rheumatism. Inasmuch as it is quite irritant when applied to the sensitive skin, it is usually mixed with an equal volume of olive (or similar) oil.

Metaphenylenediamine Hydrochlorid.

This has been recommended for the treatment of diarrhea in infants, and adults in doses of $1/6$ to $1\frac{1}{2}$ grains.

Methacetin. (Paraacetanisidin—Acetylmethylparaamidophenol—"Oxymethylated Antifebrin.")

This is a reddish-white, odorless, crystalline powder, of faintly saline-bitterish taste. It is sparingly soluble in water, readily in alcohol. It is an antipyretic, which is used principally in children's diseases. Dose (child's) 2 to 5 grains.

Methaform. (Dimethylcarbinol Chloroform.) (187)

This is in white, shiny, needle-like crystals of a slightly camphoraceous odor and taste. It is sparingly soluble in water, but readily so in chloroform, ether, alcohol and glacial acetic acid. It

is a hypnotic and antiseptic, somewhat like chloral in action. It is also used as a local anesthetic. See also Chlorbutanol.

Methazin.

This is a synonym for antipyrin.

Meth-Solules. (89)

Each capsule is composed of

Methylene blue	gr. 1
Oil of santal	m. 1½
Para copaiba	m. 1½
Oil of cinnamon	m. ½

Methyl or Methylene Bichlorid. (Richardson.)

This is a mixture of 1 volume of methyl alcohol and 4 volumes of chloroform. It has been recommended as a general anesthetic. On account of the poisonous character of the wood alcohol it should not be used.

Methyl Rhodin. (Methyl Acetylsalicylate.)

This has the same relation to oil of wintergreen that aspirin has to salicylic acid. It is described as a colorless, crystalline powder of a slight odor of wintergreen. It is soluble in alcohol and fixed oils but insoluble in water. It is used as a substitute for the salicylates in rheumatism.

Methyl-Santal. (Capsula Santali Comp.) (141)

Each capsule is stated to contain

Methylene blue	gr. 1
Oleoresin of copaiba	gr. 1¾
Oleoresin of cubeb	gr. ¾
Oil of sandalwood	gr. 1½
Oil of cinnamon	gr. ⅓
Oil of nutmeg	gr. 1/12

Methylal.

This is a colorless liquid, with an odor similar to that of chloroform, and a pungent taste. It is soluble in water, alcohol and oils. It is used as a local anesthetic; as a nerve sedative in delirium tremens, etc.; antispasmodic in strychnine-poisoning, tetanus, etc.; anodyne in gastric and intestinal pains, etc. It is used in the form of liniment with 6 parts of some bland fixed oil (1 to 6 sweet almond oil). The dose is 1 to 2 minims every 2 or 3 hours, well diluted

Methylene Bichlorid or Chlorid.

This is a colorless inflammable liquid of an odor like chloroform. It is recommended as a local anesthetic. Do not confound with methyl or methylene bichlorid (Richardson).

Methylene Blue.

This is one of the so-called aniline dyes. It is in dark blue crystals or powder, soluble in about 50 parts of water, also soluble in alcohol. It is an antiperiodic, antineuralgic and antigonorrheal. It is used externally in malignant tumors and ulcers. The dose is 1 to 5 grains in capsules or tablets 4 times daily, or 1 grain by injection. In malaria it is a specific even more so than is quinine. In the treatment of gonorrhea it has been found useful especially in combination with various oils or balsams. When given internally it colors the urine green or blue.

Methylene Blue Compound (Horwitz.)

On Dr. Orville Horwitz's recommendation, various manufacturers have put up a combination like the following in capsules or pearls:

Methylene blue	gr. 1
Copaiba balsam	m. 1½
Oil of santal	m. 1½
Oil of cinnamon	m. ½

Sometimes the oil of cinnamon is replaced by methyl salicylate.

Methyloids. (187)

Each capsule is stated to contain

Methylene blue	gr. 1
Copaiba balsam	m. 1½
Santal oil	m. 1½
Haarlem oil	m. 1¼
Oil of cinnamon	m. ½

Metral Disks.

See Sanitaris Metral Disks.

Metroglycerin.

This is said to consist of a sterile solution containing 10% of neutral glycerin and 2% of gelatin, to which are added various antiseptics. It is used as an intrauterine injection for producing uterine contractions.

Metrowine. (146)

This is an utero-ovarian tonic, each fluidounce of which is stated to contain blackhaw, 2.5 grams; blue cohosh, 1.5 grams; milfoil, 3 grams; sumbul, 1.5 grams; helonias, 1 gram; aletris farinosa, 1 gram, and "elixir aromatics," sufficient.

Mialhe's Elixir of Pepsin.

Pepsin	g. 2.5
White wine	g. 60
Simple syrup	g. 50
Alcohol	g. 5
	—H.

Microcidin. (Sodium Betanaphtholate.)

This is used as a surgical disinfectant in 3 to 5% solutions. It is an antipyretic in small doses.

Migrainin. (Antipyrin-Caffeine Citrate.)

This is a mixture of antipyrin, 85 parts, caffeine, 9 parts, and citric acid, 6 parts. It is a white powder soluble in 2 parts of water, readily soluble in alcohol. It is an antipyretic and analgesic for migraine, neuralgias, sciatica, etc., the dose being 6 to 15 grains 2 or 3 times daily.

A preparation of the same name is made by C. S. Baker & Co., the composition of which is stated to be celery and detannated guarana.

Migrol.

This is described as a preparation of guajacetic acid and caffeine. It is recommended for all kinds of headaches, neuralgia, toothache, and all nervous affections. The dose is 8 grains 1 to 3 times daily.

Migrophene.

This is quinine lecithin compound in which the taste of quinine is scarcely perceptible. It is used for migraine, headache, influenza, etc., in doses of 5 to 8 grains.

Milk of Bismuth. (159)

This is a thick white liquid consisting of hydrated oxid of bismuth and traces of subcarbonate, each fluidram being said to contain the equivalent of 5 grains of bismuth subnitrate.

Milk of Magnesia. (164)

The process for this preparation was patented some years ago. According to the specifications of this patent, magnesium sulfate and caustic soda or potash are dissolved separately in water, the solutions are mixed and boiled, and the precipitate is washed repeatedly with distilled water.

Mill's Pulmonic Syrup Comp.

See Syrup Pulmonic Comp.

Miller's Phosphorized Elixir Gentian. (134)

This is stated to contain gentian, sherry, phosphoric acid, taraxacum, glycerin and aromatics.

Miller's Universal Balm. (Formerly called Magnetic Balm.)

This is stated to contain 62% of alcohol, also camphor, red pepper, clove, oils of origanum, cinnamon, spearmint, eucalyptus, cajuput, cassafra, and pennyroyal, and water.

Mirinol.

This is the name applied to an antiseptic, hemostatic and disinfectant liquid said to contain 10% of formaldehyde and 3/10% of phenol. It is recommended for the treatment of carcinoma, lupus and similar affections.

Mischolin. (160)

Each fluidram is stated to represent

Zinc sulfocarbonate	gr. 1/20
Bismuth subcarbonate	gr. 1
Salol	gr. 1/10
Calomel	gr. 1/60
Pepsin (1:3000)	gr. 1/4
Aromatics, q. s.	

It is recommended for cholera infantum.

Mistura Corrigena (Patch.)

See Corrective Mixture.

Mistura Quinque Iodidorum. (Mixture of Five Iodids.)

Each fluidram is stated to contain

Arsenic iodid	gr. 1/24
Mercury iodid	gr. 1/24
Iron iodid	gr. 1/6
Manganese iodid	gr. 1/6
Potassium iodid	gr. 2 1/2

Mixture Creosote Compound. (90)

This is stated to be a nutritious and stimulating glyconin emulsion of beechwood creosote and "etherized cod liver oil," each fluidounce representing 4 minims of creosote.

Mixture Glyconin Comp. (180)

This is stated to contain

Cod liver oil.....	parts	40
Sherry wine	parts	40
Phosphoric acid	parts	1¼
Egg, glycerin and carminative aromatics, to make..	parts	100
No gum; no sugar.		

Mixture of Hydrastis Compound.

See Schlotterbeck's Compound Mixture of Hydrastis.

Mixture Phosphorus Comp. (43)

This is stated to contain in each teaspoonful

Mother tinct. of chamomilla..	m.	2
Mother tinct. of nux vomica..	m.	2
Mother tinct. of ignatia.....	m.	2
Mother tinct. of cinchona....	m.	2
Phosphorus	gr.	1/100
Aromatics.		

Mollin. (Sapo Unguinus.)

This is a potash soap containing an excess of fatty acids and glycerin. It has been employed as an ointment vehicle.

Mollosin. (Mollisin.)

Yellow wax	part	1
Liquid petrolatum	part	4
—Ph. Ztg.		

Monobromphenol, Ortho-

This is a dark-violet liquid of a strong odor. It is soluble in water, alcohol and ether. It is a non-irritant external antiseptic (in erysipelas particularly). It is used in 3 to 6% ointment, rubbed in for 1 minute, twice daily.

Monochlorphenol, Ortho-

This is a volatile fluid which is used by inhalation as an antiseptic in ozena, laryngitis, bronchitis, and pulmonary tuberculosis.

Monotal. (Guaiacol Ester of Ethylglycolic Acid.)

This occurs as a colorless, oily liquid of an aromatic odor. It is very slightly soluble in water, easily so in alcohol,

ether, chloroform and oils. It is used like guaiacol externally for rheumatism, etc., being rubbed on lightly or applied with a brush. It is said to be less caustic than guaiacol.

Morgan's Quincoca.

See Quincoca.

Morgan's Sabalol.

See Sabalol.

Morgan's Tissue Food.

See Tissue Food.

Morgan's Vaginal Wafers.

See Vaginal Wafers.

Mormon Bishop Pills.

According to the U. S. Department of Agriculture, this remedy consists of three kinds of pills, red, white and blue, but the composition is about the same. They contain capsicum, starch and a bitter principle.

Morrholine, Ferrated. (174)

This is said to be the active principles of cod liver oil with the glycerophosphates of lime and soda, and organic iron. The same firm also markets Morrholine with Creosote, and Morrholine, Arseniated, with Strychnina.

Morrhul (Chapoteaut.) (204)

Morrhul is a so-called alcoholic extract of cod liver oil (see also Gadulol and Jecorol). It is a brown liquid which is stated to represent 25 times its weight of cod liver oil. It is put up in capsules, the contents of each one being stated to possess the therapeutic activity of 1 teaspoonful of the oil.

Morrhul Creosote (Chapoteaut.)

Each capsule is stated to contain 3 minims of morrhulol and 1 minim of beechwood creosote.

Morrison's Pills.

These are of two kinds, Nos. 1 and 2.

Pills No. 1 are composed of aloes and cream of tartar, equal parts, made into a mass with syrup or mucilage, and divided into 3-grain pills.

The No. 2 are composed of the following:

Colocynthpart 1
 Gambogeparts 2
 Aloesparts 3
 Cream of tartar.....parts 4

Make into a mass with syrup and divide into 3-grain pills.—Cooley.

Morumalt. (Morrhumalt.) (217)

This is stated to contain
 Morrhual 25
 Extract of malt..... 25
 Comp. syrup hypophosphites.... 25
 Yerba santa, wild cherry and
 flavoring 25

It is further described as a preparation of morrhual, malt, and wild cherry, combined with hypophosphites of lime and soda. It is also put up in combinations such as the following:

With Cascara Sagrada:

Each fluidounce is stated to contain 40 minims of "cascara sagrada aromatic."

With Codeine and Terpin Hydrate:

Each fluidounce contains 1/16 grain of codeine and 1 grain of terpin hydrate.

With Creosote and Guaiacal:

Each fluidounce contains 3 minims of creosote and 2 minims of guaiacal.

With Hypophosphites:

Each fluidounce contains 2 grains each of the hypophosphites of lime and soda and 1 grain of iron hypophosphites.

With Iron and Manganese:

Each fluidounce is stated to contain 8 grains of the pyrophosphates of iron and manganese.

With Iron, Quinia and Strychnia:

Each fluidounce is stated to contain

Iron pyrophosphategr. 4
 Quinine pyrophosphategr. 1
 Strychnine pyrophosphate ..gr. 1/100

With Liquid Peptones (Ford's):

Each fluidounce is stated to contain the nutritive properties of 1½ ounces of beef.

Mother's Joy, The.

This is said to be made as follows:

Chloroformdrops 10
 Tincture of saffron.....m. 30
 Honeydr. 4
 Glycerinoz. 1

It is a preparation applied to the gums of children while teething.

Motherwort Compound.

This is stated to contain fluid extract of motherwort combined with golden seal, cramp bark and oil of rue, the whole flavored acceptably.

Mouches de Milan.

Rosin 65
 Venice turpentine 50
 Yellow wax 22
 Suet 2
 Cantharides, powder 30
 Euphorbium, powder 10
 Storax, liquid 5
 Oil of thyme..... 1

Mix together by melting, spread upon silk tissue, and cut into small rectangular pieces.—H.

Moussette's Neuralgia Pills. (44)

Each pill contains ⅓ milligram of pure aconitine and 5 milligrams of quinine.

Mucogene.

This is said to be "chlorid of dimethyl-phenyl - para - ammonium - and - oxynaphthoxazine" and is defined as a new synthetic laxative. It is put up in capsules, two or three of which are a dose.

Muiracithin. (139)

The main constituents are stated to be muira puama and lecithin. It is recommended for sexual neurasthenia.

Mure's Syrup Bromid Potash.

Potassium bromid.....g. 10
 Simple syrup.....g. 100
 Mix and dissolve.—H.

Muscarine Nitrate.

This occurs as a deliquescent mass, soluble in water and alcohol. It is an antihydrotic and antispasmodic in doses of 1/32 to 1/16 grain.

Musculine.

This is described as the sterilized extract of the muscular tissue of the ox. It is recommended for convalescence from severe diseases, being stated to be superior to beef extracts or beef tea.

Musculon.

This is stated to be prepared from muscular tissues by digestion with pancreatic juice. It is stated to have the property of aiding the liver in the splitting up of grape sugar.

Mycodermine.

This is the name given to an extract of yeast which is marketed in the form of pills or tablets. It is recommended for boils, etc.

Mydrine.

This is a combination of two mydriatics, ephedrine and homatropine hydrochlorids (100:1). It is a white powder, soluble in water. It is used as a mydriatic (especially where evanescent mydriasis is desired—in diagnosis, etc.). It is used in the form of a 10% solution.

Mydrol. (Phenylpyrazoliodomethylate.)

This is a white, odorless powder which is freely soluble in water. It is used as a mydriatic in 5 to 10% solutions.

Myelocene.

This is a preparation of bone marrow, prepared by extracting the marrow with ether, evaporating the latter, and mixing the residue with 1% of chloreton for preservation.

Myronin.

This is an ointment vehicle composed of stearin soap, carnauba wax, and dog-ling oil.

Myrrholin.

This is a solution of the resin of myrrh in castor oil, used as an application to wounds.

Myrtol.

This is derived by fractional distillation of the oil of myrtus communis. It is a colorless liquid of aromatic odor. It is recommended as a disinfectant in putrid bronchitis and diseases of the respiratory tract. The dose is 5 minims every 2 or 3 hours.

Naftalan.

This is stated to contain 96% of a crude naphtha derived from a spring in the Caucasus and to this added 4% of anhydrous soap to impart consistency. It is in the form of a blackish-green, ointment-like mass of an empyreumatic

odor. It is insoluble in water, water or glycerin but is readily miscible with fats. It is said to be anodyne, antiphlogistic, antiseptic and antiparasitic and is recommended for burns, erysipelas, eczemas, etc.

Nalicin.

This is a local anesthetic in use by German dentists. It is said to consist of a mixture of 1% spirit of nitroglycerin, 1% cocaine hydrochlorid, "compound spirit of thymol," phenol, sodium chlorid, formaldehyde, alcohol and water.

Napeline.

This is one of the alkaloids from *Aconitum napellus*. It is a white powder, soluble in water, alcohol and ether. It is used as an anodyne and antineuralgic in lumbo-sciatic neuralgia, rheumatic pains, etc.. Dose: $\frac{1}{4}$ to $\frac{1}{2}$ grain.

Na-Phoskol.

According to the manufacturers, each fluidram contains 70 grains of sodium phosphate and 5 grains of sodium nitrate.

Naphthalin. (Naphthalene.)

This is a hydrocarbon derived from coal tar. It is in white lustrous scales of a peculiar odor, insoluble in water, soluble in alcohol, ether, and oils. It is used as an intestinal antiseptic in doses of 2 to 8 grains. It is also used for tapeworms, 15 grains being given at a dose, to be followed in 2 to 4 hours by a cathartic. It is used externally in some skin diseases in the form of a 5 to 10% ointment.

Naphthocresol.

This is a mixture of phenols and cresols dissolved in a solution of resin soap.

Naphthoformin.

This is prepared by the action of formaldehyde on naphthol. It is a white crystalline substance soluble in water or alcohol, insoluble in ether or oils. It is used in dermatology.

Naphthol(Alpha.)

This is a constituent of coal tar. It is in colorless crystals, of a carbolic odor and a burning taste. It has been used as an antiseptic, both internally and externally. Being more toxic than betanaphthol, it is used but seldom.

Naphthal Benzoate.

See Benzonaphthol.

Naphthol(Beta.)

This is a constituent of coal tar and is also derived from naphthalene. It is in white scales or crystalline powder. It is insoluble in water, very soluble in alcohol, ether and chloroform. It is an antiseptic and antizymotic, useful especially in fermentative conditions of the intestinal canal. The dose is 2 to 8 grains. It is also used externally in solution or ointment, for many skin diseases.

Naphthol Camphor. (Camphorated Naphthol.)

A syrup liquid prepared by fusing together 1 part of betanaphthol and 2 parts of camphor.

Naphthoxol.

This is said to be a mixture of a 2% alcoholic solution of naphthol and a 3% solution of hydrogen dioxide. It is recommended as a powerful germicide in the treatment of wounds.

Narceine Hydrochlorid.

Narceine is one of the alkaloids of opium. The hydrochlorid is in colorless needles, which are soluble in water and alcohol. It is employed as a hypnotic in doses of $\frac{1}{6}$ to 1 grain.

Narceine-Sodium and Sodium Salicylate.

See Antispasmin.

Narcoform.

This is a name given to a mixture of 12 parts of ethyl chlorid, 7 parts of methyl chlorid and 1 part of ethyl bromid.

Narcotile.

This is stated to be methyl-ethylene bichlorid. It is a transparent, highly volatile, and very inflammable liquid.

It is a disinfectant, intended especially for use in dental practice. In its anesthetic action it is stated to resemble ether.

Narcotine.

This is one of the alkaloids of opium. It is in colorless crystals, insoluble in water, but readily soluble in alcohol and ether. It is used as an antiperiodic for malarial fever in doses of $1\frac{1}{2}$ to 3 grains every two or three hours.

Narcyl. (Ethyl-Narceine Hydrochlorid.)

This is in acicular crystals soluble in 120 parts of cold water, more soluble in warm water and in the presence of cinnamates, benzoates, citric acid, etc. It is used as an antispasmodic and anodyne for coughs, whooping cough, asthma, etc., in doses of 1 grain per mouth; in spasmodic crises of the respiratory tract, it may be given hypodermically in doses of $\frac{1}{6}$ to $\frac{1}{3}$ grain.

Nargol. (Silver Nucleide.)

This is a compound of silver and nucleic acid containing about 10% of silver. It is a light brownish-white powder, readily soluble in warm water, the solution not being precipitated by sodium chlorid or other reagents for silver, also not by albuminous substances and hence is more penetrating than inorganic silver compounds. It is strongly bactericidal and is recommended in the treatment of gonorrhea, etc., as a substitute for silver nitrate in the form of $\frac{1}{4}$ to 5% aqueous solutions.

Nasrol.

See Symphorol.

Natroline. (93)

This is described as a "purified petroleum for internal use," "odorless, tasteless, antiseptic."

Neat's Bronchiline.

See Bronchiline.

Nectriamin.

This is a liquid preparation from cultures of *Nectria ditissima*, a so-called cancer parasite found on trees. It has been used in the treatment of cancer,

not as a cure, but simply as a palliative for some of the symptoms.

Neisser's Oil.

This consists of mercury, 20 parts, ethereal tincture of benzoin (i. e., benzoin dissolved in ether instead of in alcohol), 5 parts, and liquid petrolatum, 40 parts.

Nenndorf Sulfur Soap.

This is described as a superfatted sulfur soap, which is made in two strengths, viz., 16% and 36% of sulfur. The sulfur used is that derived from the sulfur spring of Nenndorf, Germany. It is used for acne, sycosis, eczema, and psoriasis.

Neodermin.

This is an ointment containing lanolin, 85, petrolatum, 10, difluordiphenyl, 4, and fluorpseudocumol, 1. It is recommended as an application for ulcerated surfaces, lupus and various other skin diseases, and is also useful for burns. It is put up in collapsible tubes.

Neoferrum. (124)

This is defined as "malto-peptonate of iron and manganese with maltine (arsenicated)." It is also stated to contain "maltine attenuated with sherry."

Neoside.

This is the name given by a French manufacturer to an iodo-catechin made by adding iodine in minute portions at a time to a hot alcoholic or aqueous solution of catechin. When the liquid cools, a yellow, amorphous powder is obtained which is sparingly soluble in water but readily in alcohol, ether or acetone. It is recommended as a substitute for other iodine preparations, both for internal and external use. When taken internally it is said to disturb the system less than other iodine compounds.

Nepenthe.

This is an English preparation of opium.

Nephritic Pills. (211)

These are stated to contain apiol, podophyllin, oil of juniper, potassium

nitrate, and extracts of buchu, asparagus seed, and digitalis.

Nephritin. (167)

This is described as "the primary substances of the cells of the cortex and convoluted tubules of the kidney." It is put up in 5-grain tablets.

Ner-Vigor Syrup (Huxley.)

Ner-Vigor Tablets (Huxley.)

A name for Glycero-Phosphates (Huxley), which see.

Nervitone Tablets. (212)

Each tablet is stated to contain

Phosphorus	gr. 1/100
Ext. nux vomica	gr. 1/10
Ext. of sumbul.	gr. 1/2
Asafetida	gr. 1/2
Iron carbonate	gr. 1 1/2

Nervocidine.

This is the name applied to the hydrochlorid of the alkaloid derived from an Indian plant called gasu-basu. It is a yellow, hygroscopic powder, readily soluble in water, less soluble in alcohol and ether. It has been used as a local anesthetic in dentistry in 1/8 to 1/2% solutions.

Nervol.

This is stated to be a mixture of citrozon (which see) with 10% of lithium bromid.

Neufaline.

According to Hager, this is petroleum ether (benzine.)

Neuraline.

According to Hager, this is a compound of about the following:

Tincture of aconite	10
Tincture of opium	3
Chloroform	5
Spirit of peppermint	5

Neurilla. (54)

This is described as containing "the essential (anti-nervous) active principles of scutellaria and aromatics."

Neurobion.

Each cc. is stated to contain approximately, phosphorus, .01 g., arsenic, .000066 mg., iodine, .000066 mg., all in organic combination, and anacardium, ignatia, and trinitrophenol, each .000075 mg.

Neurocaine. (Billets of Cocaine.) (179)

Each billet contains $1/12$ grain of cocaine hydrochlorid without excipient. The billets are $1/8$ inch long and $1/20$ inch in diameter. They are used for pressure anesthesia or as a local anesthetic in dental practice.

Neurodin. (Acetyl-para-oxy-phenylurethane.)

This is a colorless, odorless, crystalline powder, soluble in 1,400 parts of cold and in 140 parts of boiling water. It is a prompt antineuralgic in migraine, rheumatic pains, sciatica, locomotor ataxia, etc., acting within half an hour; also an antipyretic in typhoid, pneumonia, scarlatina, etc. The dose as an antineuralgic is 15 to 25 grains, as an antipyretic, 8 grains.

Neuroguaiacol.

A mixture each teaspoonful of which contains $1\frac{1}{2}$ grains of calcium glycerophosphate and $1\frac{1}{2}$ grains of guaiacol.—Pharm. Centhalh.

Neuro-Lecithin. (1)

This is a preparation containing lecithin with small amounts of fats and cholesterin. It is said to be made from the brain and spinal cord of animals. The water and fat are separated by heat, the soluble portions are extracted from the residue with ether, and this is precipitated with acetone. It is put up in pills and tablets each containing $1/2$ grain.

Neuronal. (Bromdiethyl Acetamide.)

This is a crystalline substance of a bitter taste and a faint odor of camphor. It is soluble in alcohol, ether or chloroform, and in 115 parts of water. It is used as a hypnotic in doses of 8 to 15 grains.

Neuronidia. (Elixir Diethylmalonylurea.) (179)

This is said to contain in each 2 fluidrams, 4 grains of veronal (diethylmalonylurea) in a menstruum containing 35% of alcohol, with aromatics.

Neurosin.

A French preparation (in syrup or granule form), which contains as an active constituent calcium glycerophosphate.—Coblentz.

Neurosine. (64)

It is claimed that each fluidram contains 5 grains each of c. p. bromids of potassium, sodium and ammonium, $1/8$ grain of zinc bromid, $1/64$ grain each of extract of belladonna, henbane and cannabis indica, 4 grains of extract of lupulin, and 5 minims of fluid extract of cascara, with aromatic elixirs.

Nichol's Elixir Peruvian Bark with Protoxide of Iron. (22)

This is described as a combination of iron with Peruvian bark in a pleasant and permanent form. Each fluidounce is stated to contain 6 grains of oxid of iron and the equivalent of 10 grains of solid extract of cinchona.

Nichol's Tasteless Cod Liver Oil.

This is stated to contain 15% of pure cod liver oil, about 30% of syrup of hypophosphites including quinine, manganese and iron, 20% of fluid extract of wild cherry, and 15% of extract of malt.

Nicoliein.

This was a German proprietary remedy vaunted as a cure for the morphine habit, but which was found to consist of fluid extract of cinchona with salicylic acid, glycerin and morphine. The proportion of the latter varied from 2 to 4%.

Nigridine. (Thyro-Iodose.) (169)

This is described as a compound of iodine with concentrations of the thyroid and thymus glands of the sheep.

Nirvanin.

This occurs as a white, odorless powder or small crystals which are soluble in water or alcohol. It is a local anesthetic and is used as a substitute for cocaine in 1 to 5% solutions for various minor or major operations and in dentistry for devitalizing nerve pulps and for painless tooth extractions. It is said

to be but very slightly toxic as compared with cocaine. Its solution is also antiseptic so it is not necessary to boil it although boiling does not decompose it.

Nitrogenized Iron. (17)

This is stated to consist of egg albumen, ferric oxid, soda, and sugar. It is used as a tonic and hematinic.

Nitrogenized Iron Improved, contains nitrogenized iron, manganese and arsenic.

Nizin. (32)

This is a zinc salt of sulfanilic acid. It is readily soluble in water, is an antiseptic and is said to be non-irritant and non-toxic. Even in strong solutions it does not coagulate albumen. In the proportion of 1 grain to the ounce, it is used as a urethral injection in gonorrhea. It is also used as a vaginal injection in the proportion of 2 or 4 or even 6 grains to the ounce.

Nizolysol.

This is a lysol preparation which possesses the ordinary properties of lysol but differs from it in odor, being pleasant and aromatic.

Normalin. (36)

This is stated to be composed of "hemoglobin and serum-albuminate of arsenic." It is recommended for "degenerative lesions of malnutrition."

Normalin with Digitalis contains in addition to the above 1 minim of fluid extract of digitalis to the fluidram.

Normalin with Manganese consists of normalin to which is added 1 grain of "nucleo-albuminate of manganese" per fluidram.

Norton's Chamomile Pills.

Extract of aloes, aqueous....gr. 60
Extract of gentian.....gr. 180
Oil of chamomile.....drops 20
Make 60 pills.—Cooley.

Norwich Urethral Crayons. (148)

Each crayon is stated to contain
Corrosive sublimate.....gr. 1/200
Zinc sulfocarb.....gr. 1/16
Golden seal, powder.....gr. 1/16

Morphine sulfate.....gr. 1/12
"Alum (non-irritating)"....gr. 7/8
Cocoa butter, q. s.

They are recommended for gonorrhea and gleet.

Nosophen. (Iodophene—Tetraiodophenolphthalein.)

This is a grayish, odorless, tasteless powder, containing 60% of iodine. It is soluble in alkalis, somewhat soluble in chloroform and ether, slightly soluble in alcohol, but insoluble in water or acids. It is used as an antiseptic like iodoform, as a dusting powder for burns, wounds, ulcers, etc.

Its sodium salt is called antinosin, its bismuth salt eudoxin, the mercury compound apallagin.

Nourry's Iodinated Wine.

This is stated to be composed of

Ioding. 3.3
Tanning. 6.6
Sweet wine.....liter 1

Each tablespoonful is stated to contain 5 cg. of iodine combined with 10 cg. of tannin.

Novargan. (Silver Proteinate.)

This is albumin compound of silver containing 10% of metallic silver. It is a fine yellow powder, very soluble in water, the solution not being precipitated by sodium chlorid or the usual reagents for silver salts. Solutions must not be heated and must be protected from light. It is a bactericide and is claimed to be more effective and less irritating than other protein-silver compounds. It is said to be useful for the treatment of gonorrhea, especially as an abortive in the first stage. For this purpose 8 minims of a 15% solution is to be instilled through a catheter on the anterior surface of the urethra.

Novaspirin.

This is the, methylene-citric-acid ester of salicylic acid, and is recommended as a substitute for salicylates. It is a white crystalline powder of a slight sour taste, readily soluble in alcohol, almost insoluble in water. It contains 62% of salicylic acid. It is given in influenza, colds

and rheumatism in doses of 15 grains several times daily.

Novocaine.

This is in fine, colorless needles, soluble in an equal weight of water, in 30 parts of alcohol. The aqueous solution of the salt may be heated to boiling without decomposition. It gives precipitates even in very dilute solutions with the usual alkaloidal reagents. It is also incompatible with alkalis and their carbonates. It is a local anesthetic similar to cocaine but is said to be far less toxic than any of the cocaine substitutes. When injected subcutaneously it is said to exert a prompt and powerful anesthetic action but the effect is not sustained. This may be remedied by the simultaneous injection of suprarenal alkaloid.

Novocaine Base.

This is the base of novocaine, the latter being a salt. This base is soluble in almond or olive oil up to 10% if gently warmed on a water bath. This solution is of use in the treatment of diseases of the ear, nose and throat.

Novocaine Nitrate.

This is a chemical similar to novocaine, having the same properties and sold at the same price.

Novozon.

This is the name applied to a mixture of magnesium dioxid and magnesium carbonate.

Noxinol.

This is a photographic developer which is stated to be the sodium salt of rosolic acid. It is claimed that the addition of this chemical to any developer does away to a considerable extent with the necessity for dark chamber and the use of red light.

Nuclein.

This is a phosphorated proteid which was first prepared from the nucleus of cells, then from egg yolk and spleen pulp, but now generally from yeast. It occurs as a grayish-white, amorphous

powder, only very slightly soluble in water, insoluble in alcohol or ether, soluble in dilute alkalis, especially upon heating. It is a germicide, and its action is marked by the fact that it increases the number of white corpuscles.

To this is ascribed its good effect in pleurisy, pneumonia, and infectious diseases. It is used largely in the treatment of tuberculosis. The dose is 2 to 4 grains three times a day.

Nuclein Solution and Capsules. (159)

Nuclein Solution No. 1 contains 5% of nucleinic acid from yeast and is intended especially for hypodermic use. The No. 2 solution also contains 5% of nucleinic acid but differs from the No. 1 in containing albuminous matter derived from the source of production.

Nuclein Solution, Veterinary, also contains 5% of nucleinic acid from yeast and is also intended for hypodermatic use.

Nuclein Capsules each contain 2 grains of dry nucleinic acid from yeast.

Nucleogen.

This is a compound of nucleinic acid with iron and arsenic. It is marketed in tablet form with .05 g. of this compound to the tablet, also in the form of a solution for hypodermic use, each cc. of which contains 1/10 g. The preparation is stated to be a general tonic.

Nucleo-Peptide (Ford-Winslow.) (217)

Each fluidounce is stated to contain
Beef jellygr. 8
Nucleinic acidgr. 2
Bitter orange peel.....gr. 6
Brandy and flavoring, q. s.

It is described as a nutritive tonic and germicide useful for nasal catarrh, in convalescence from pneumonia, typhoid fever, puerperal fever, etc.

Nucleo-Ferri-Mangan. (81)

Each teaspoonful is stated to contain
Albuminate of iron.....gr. 2½
Albuminate of manganese.....gr. 1
Nuclein solutiondrops 2

It is recommended for anemia, chlorosis, amenorrhea, tuberculosis, etc.

Nu Tone. (150)

This formula is given:

Cod liver oil,
Malt extract,
Beef juice,
"Glycerine emulsion," each, 25%.
Hypophosphites of lime and soda,
each, gr. i
Tincture of nux vomica, drops i in
each teaspoonful.

Nutritive Hypophosphites. (131)

Each fluidounce is stated to contain
Calcium hypophosphitegr. i
Sodium hypophosphitegr. i
Manganese hypophosphite ..gr. i
Potassium hypophosphite ...gr. 1½
Iron hypophosphitegr. 1¼
Quinine hypophosphitegr. 7/16
Strychnine hypophosphite ...gr. 1/16

Nutritive. (162)

Each teaspoonful represents 33⅓% of
an alcoholic extract of cod liver oil
(prepared from fresh cod livers), with
3 grains of hypophosphite of lime, 1½
grains of hypophosphite of soda, com-
bined with malt, wild cherry, and port
wine.

Nutrolactis. (151)

It is stated that the fluid extracts of
the plants *Galega officinalis*, *G. apolinea*
and *G. tephrosea*. It is used as a galact-
agogue.

Nut-emulsion. (131)

This is stated to be an emulsion con-
taining 50% of cod liver oil with eggs,
brandy and phosphates.

**Nutrose. (Casein-Sodium — Sodium
Caseinate.)**

This is the sodium salt of milk casein,
containing 65% of proteids. It is pre-
pared by dissolving moist casein, freshly
precipitated from skimmed milk and
washed with water in solution of sodium
hydrate, evaporating the solution to dry-
ness in vacuo, powdering the residue,
washing it successively with alcohol and
ether, and drying. It is a coarse, white,
odorless and tasteless powder which is
soluble in water. It is incompatible with
acids. It is recommended as a non-irri-
tant nutrient in wasting diseases, such as
the cachexias in carcinoma, anemia, dia-

betes, etc., and in acute and chronic feb-
rile ailments such as pneumonia, typhoid
fever and tuberculosis. The dose, i to
1½ ounces a day, is best taken in soup
or milk.

Nutryl. (79)

This is described as "containing the
normal bases of the lecithins, protagon,
nuclein, neurin, etc., combined with the
extract from naturally germinated cer-
eals, barley, wheat and oats."

Obtundo.

This is the name applied to a local
anesthetic intended for dental use, which
contains chloretone, cocaine, nitroglyce-
rin, thymol, menthol and the oils of win-
tergreen, eucalyptus and clove.

Oculine.

A solution in ordinary water contain-
ing 1% of boric acid and 5% of glycerin.
—Ph. Rundsch.

Odda.

This is the name applied to a new in-
fant's food which is distinguished chiefly
by the replacement of the fat of cows'
milk by egg yolk and cocoa butter. The
food also contains partly digested flour
and sugar.

Odontodol.

This is said to be a mixture of
Cocaine hydrochlorid.....part i
Cherry-laurel waterpart 1
Tincture of arnica.....parts 10
Sol. of ammonium acetate..parts 20

Odontunder.

This contains 1.35% of cocaine hydro-
chlorid with some carbolic acid, glycerin,
oil of rose, and probably alcohol.—Sadt-
ler.

Oidtman's Purgative.

Buckthorn, cutgr. 100
Jalap, powdergr. 100
Tobacco leaves, cut.....gr. 50
Sodium nitrategr. 50
Sodium sulfategr. 50
Magnesium sulfategr. 50
Potassium carbonategr. 38
Sodium chloridgr. 25
Potassium hydrategr. 40
Oil of anise.....drops 3
Oil of wintergreen.....drops 5
Castor oilfl.dr. 5

Alcohol	fl.oz.	2
Glycerin	fl.oz.	9
Distilled water	sufficient	

Mix the first 10 ingredients with 11 fluidrams of alcohol and 5½ fluidounces of water; macerate for several days in a warm place, agitating frequently; strain, to the colature add the castor oil mixed with 5 fluidrams of alcohol, and a solution of the caustic potash in enough water to make 6½ fluidrams, and to the whole add the glycerin.—Hager.

A thimbleful is to be injected into the rectum after stool, for hemorrhoids and various affections of the bladder, kidneys and uterus.

Oians.

These are compounds of petrolatum which have the property of forming emulsions with water in the proportion of 1 part to 5 up to 1 part to 2. These emulsions are stable and do not separate. They have no caustic action and are easily absorbed by the skin. Various compounds are prepared, such as iodolan, naphtholan, etc.

Oleite.

This is a jelly-like ointment vehicle obtained by acting upon castor oil with sulfuric acid.

Oleocresote. (Creosote Oleate.)

This is a chemical combination of creosote and oleic acid containing 33% of the former. It is a yellowish, oily liquid, neutral and non-caustic, soluble in chloroform or ether, not in alcohol or water. It is used in the treatment of catarrhal affections of the respiratory tract, in influenza, scrofula, etc., the daily dose being ½ to 2½ fluidrams.

Oleo-Maltose. (36)

This is stated to contain maltose, milk peptone, saw palmetto, the mixed hypophosphites (lime, soda and potassa), and cod liver oil 33⅓%.

Oleo-Maltose with Creosote contains in addition to the above 8 drops of creosote to the fluidounce.

Oleo-Stearate of Zinc (Chappell's Formula.)

See Emoleo.

Oleoze Co.

Oil of lavender.....	part	1
Oil of clove.....	part	1
Oil of cinnamon.....	part	1
Oil of thyme.....	part	1
Oil of citron.....	part	1
Oil of mace.....	part	1
Oil of neroli.....	part	1
Peru balsam	parts	3
Deodorized alcohol	parts	240

Oliophen.

This is said to be a solution of salol in olive oil containing also some constituents of linseed. It is used internally as an antigonorrhoeic in doses of 30 drops 3 times daily.

Olivier's Biscuit's Depuratif.

According to Hager, these are biscuits made with sugar and milk, each one weighing 16 g. and containing 1 centigram of corrosive sublimate.

Omorol.

This is the name given to an albuminate of silver, insoluble in water, but which passes into solution in the tissues and secretions of the body. It is a bactericide recommended in the local treatment of diphtheria.

Opotherapeutics.

The so-called "opo" substances are the active principles, which are the leucomaines, of the various organs, thymus, thyroid gland, spleen, testicles, etc., united with sodium chlorid; the product corresponds in activity to 10 times its weight of the fresh tissue matter of the particular organ, the product being freely soluble in water and very diffusible.

Oophorin.

This is a dry preparation of the ovaries of pigs and cows. It is put up in 5-grain tablets, and is used in female disorders, chlorosis, etc.

Opnol.

This is a solution of periplocin, the glucoside from the bark of *Periploca gracea*, with glycerin and small amounts

of sodium iodid, menthol, pyridin, etc. It is used in asthma and heart diseases as a spray.—Pharm. Ztg.

Orangeine.

Each 5-grain powder is stated to contain $2\frac{4}{10}$ grains of acetanilid, 1 grain of sodium bicarbonate, $\frac{6}{10}$ grain of caffeine and 1 grain of homeopathic trituration of blue flag, mandrake and nux vomica.

Orchidin.

This is liquid extract of bulls' testicles, which is employed hypodermically.

Orchipin.

This is an oily extract of bulls' testicles. It has been recommended as an antidote for atropine poisoning and as a nerve tonic in nervous debility and neurasthenia.

Oresol.

This is the monoglycerinic ether of guaiacol. It is soluble in 40 parts of water and is very soluble in alcohol. It is said to be non-irritating to the stomach, it not being decomposed until it reaches the intestines. It is applicable in all cases where guaiacol or creosote is indicated.

Orexine Hydrochlorid. (Phenyldi-hydroquinazoline Hydrochlorid.)

This is in colorless, odorless crystals of a bitter, pungent taste, freely soluble in hot water and in alcohol. It was used for anorexia (lack of appetite) in doses of 2 to 8 grains. It is now superseded by the tannate, which see.

Orexine Tannate.

This is a yellowish, odorless, practically tasteless powder, insoluble in water, very slightly soluble in alcohol, readily so in hydrochloric acid. It is used for anorexia (loss of appetite not due any lesion of the stomach) in doses of 4 to 8 grains 1 or 2 hours before the principal meals. It is also useful for seasickness and vomiting of pregnancy and that following narcosis. It is incompatible with iron compounds.

Orexoids.

This is the name given 4-grain tablets of orexine tannate.

Oriental Cream.

See Gouraud's Oriental Cream.

Orphol. (Bismuth Betanaphtholate—Betanaphthol Bismuth.)

This is a brown, almost odorless and tasteless, non-caustic, non-irritating powder, insoluble in water, and containing 80% of bismuth oxid and 20% of betanaphthol. It is partly decomposed in the stomach and entirely so in the intestines. It exerts an astringent and antiseptic action along the intestinal tract, and has the advantage of being entirely non-toxic. It is therefore used for summer diarrheas, typhoid fever, dysentery, gastritis, etc. The dose is 5 to 15 grains 3 times daily.

Orthoform-New.

This is the methyl ester of metamidoparaoxybenzoic acid. It is a fine, white, crystalline powder, odorless and tasteless. It is only sparingly soluble in water but soluble in 5 or 6 parts of alcohol. It is decomposed by boiling with water or by warming with alkalies or their carbonates. It is a local anesthetic, resembling cocaine in its local action but not penetrating the tissues on account of its insolubility. It is somewhat antiseptic and practically non-toxic in the usual doses. It is used internally to relieve the pain of gastric ulcer. It has been applied locally as an analgesic to wounds of every kind, including burns and ulcers. It has been used in dentistry, in nasal catarrh, hay fever, etc. Internally the dose is 8 to 15 grains. Externally it is used as a dusting powder, or applied as an ethereal solution or oily mixture or in ointment form.

Orthoform-New Hydrochlorid.

This is the hydrochlorid combination of orthoform. It is a white, crystalline powder, soluble in 10 parts of water. Its compatibilities, action, uses and dosage are the same as those of orthoform—new, which see.

Osgood's Cholagogue.

Quinine sulfate	dr. 2
Fluid ext. of culver's root..	fl.dr. 2
Saturated tinct. of stillingia..	fl.oz. 4
Fluid ext. of podophyllum..	fl.dr. 3
Oil of sassafras.....	drops 10
Oil of wintergreen.....	drops 10
New Orleans molasses, to make	fl.oz. 8
—Kilner's Form.	

Osmic Acid. (Perosmic Acid—Osmium Tetroxid.)

What is commonly known as osmic acid is actually osmium tetroxid. It is in yellow hygroscopic needles, which melt at the temperature of the body and are of an intolerably pungent and suffocating odor. The vapor is extremely irritating to mucous membranes. It is soluble in water, alcohol or ether. It is used as an antineuralgic, particularly in sciatica, and as antiepileptic. The dose is $\frac{1}{64}$ grain, given several times daily. As an injection it is given in quantities of $\frac{1}{20}$ to $\frac{1}{8}$ grain daily in 1% solution.

Osmosum. (117)

This is described as a combination of "aluminum, glycerin and phenol." It is recommended as an application in all cases of inflammation. It is also put up with picric acid and with salicylic acid.

Ossalin.

This is the name given to a fat prepared from fresh beef bone marrow. It is recommended as an ointment vehicle.

Oubain.

This is the active principles of the plant that furnishes the African arrow poison. It strengthens the systolic action of the heart and increases the blood pressure.

Ovadin.

This is an extract of ovaries.

Ovagal.

This is a combination of gallic acid and albumin. It forms a loose powder which, when taken in teaspoonful doses on an empty stomach, stimulates the appetite and has a laxative effect. It is indicated in cholelithiasis, chronic constipation, hemorrhoids, and diabetes.

Ovaraden.

This is a tasteless and odorless powder consisting of the active substance of pigs' ovaries, 1 part representing 2 parts of fresh gland. It is used in dysmenorrhea and neurasthenia in doses of 15 to 30 grains daily. It is put up in the powder form, also in 4-grain tablets.

Ovariin.

This is a powder, 1 part of which represents 8 parts of fresh cow's ovary, being the desiccated substance of the ovary. It is used in chlorosis, affections of the heart, and menstrual troubles. It is also put up in 3-grain tablets. The dose is 8 to 24 grains 3 times daily.

Ovarine.

This is the sterilized extract of pigs' ovaries. It is used in cases of ovarian derangement which are classed under functional disturbances.

Ovaritone. (182a)

Each teaspoonful is stated to contain

Viburnum prunifolium	gr. 8
Hydrastis canadensis	gr. 5
Senecio aureus	gr. 5
Passiflora incarnata	gr. 4
Anemone pulsatilla	gr. 2

Elixir aromaticus, q. s.

Ovaron.

This is a preparation made by treating the active constituent of cow's ovaries with tannin so as to produce a substance which is not affected by the gastric juice but will be absorbed in the intestinal tract.

Ovoferrin. (Iron Vitellin.) (18)

This is a solution containing 5% of an artificial proteid combination of iron; it also contains 10% of alcohol and some aromatics. The liquid is of a reddish-brown color, little odor, and a flat, slightly aromatic and alcoholic taste. It is used for the same purposes as other organic compounds of iron.

Ovo-Maltine.

This is a dry preparation of pure malt extract, fresh eggs, milk and cocoa, the starch of the latter having been converted into maltose.

Ox-Gall Tablets, Compound. (70)

Each tablet is stated to contain
 Inspissated ox-gallgr. 2
 Extract of pancreas.....gr. 2
 Extract of nux vomica.....gr. $\frac{1}{8}$

Oxaphor. (Solution of Oxycamphor.)

Oxycamphor is derived from camphor by replacing a hydrogen atom by a hydroxyl group, and oxaphor is a 50% alcoholic solution of oxycamphor. The latter is a white, crystalline powder, soluble in about 50 of cold water, more soluble in warm water, and readily soluble in alcohol, ether or chloroform. Owing to the fact that it is decomposed on prolonged exposure to the atmosphere, it is marketed only in the form of the 50% alcoholic solution. It is recommended as a substitute for morphine in respiratory disorders, such as dyspnea, nervous asthma, emphysema and bronchitis in doses of 40 to 60 drops.

Oxone. (174)

This is understood to be a combination of the peroxids of the alkaline earths. On contact with water it liberates oxygen.

Oxycamphor.

See Oxaphor.

Oxychlorine. (155)

According to the manufacturers, this is "tetraborate of sodium and potassium combined with oxychlorid of boron."

Oxychlorine Dusting Powder.

This is stated to be composed of
 Oxychlorine 5%
 Tannic acid 1%
 Sugar of milk, rice powder, and
 "precipitated cellulose".....94%

Oxydasin.

This is a solution of 1 g. of vanadic acid in 2000 g. of water, also containing some glycerin.

Oxydendron Compound, Fluid. (143)

Each fluidram is stated to represent
 Corn silk, freshgr. 8
 Hydrangeagr. 8
 Queen-of-the-meadowgr. 8
 Haircap mossgr. 8
 Juniper berriesgr. 6
 Water eryngogr. 4

Sourwood leavesgr. 1
 Lithium benzoategr. 3
 Aromatics, q. s.

Oxygen Aquae.

A colorless, odorless and tasteless liquid found to be water.—A. B. Prescott.

Oxygen, Compound.

A colorless, aqueous solution of ammonium nitrate and lead nitrate, the two salts being in nearly equal proportions, and together forming about 3% of the solution.—A. B. Prescott.

Oxygen, Compound, Green's.

An aqueous solution of ammonium nitrate with a very little lead nitrate.
 —A. B. Prescott.

Oxygen, Compound, Solid.

This is ammonium nitrate.
 —A. B. Prescott.

Oxygen, Compound, O'Leary's.

Contains alcohol, chloroform, bitter almond oil, balsam of tolu and red coloring matter.—A. B. Prescott.

Oxynol. (24)

This is given as the formula:

Ichthyolpart 1
 Phenolpart 1
 Zinc peroxidparts 2
 Alum, powderparts 3
 Zinc oxidparts 5
 Menthol and aromatic oils.
 Petrolatum and stearin.

Oxyntin. (70)

This is represented to be an organic combination of hydrochloric acid with albumin, containing 5% by weight of absolute hydrochloric acid. It is readily miscible with water and is soluble in the gastric juice.

Oxyphenacetine Salicylate.

This occurs in glassy scales. It is used as an antipyretic and antirheumatic.

Oxysparteine Hydrochlorid.

A salt of an alkaloid obtained from sparteine. It is in colorless crystals, soluble in water and alcohol. It is a cardiac tonic, usually employed hypodermically. For one injection, $\frac{3}{4}$ to 1½ grains.

Uzalin.

A disinfectant said to consist of a

mixture of calcium, magnesium and iron sulfates, with caustic soda and magnesia.—Coblentz.

Ozogen. (211)

This is a 3% hydrogen peroxid.

Ozolax. (157)

These are tablets stated to represent "soc. aloes, ipecac, nux vomica, and henbane."

Ozolyptol. (157)

This is stated to represent eucalyptol, menthol, thymol, biborate and benzoate of sodium, formaldehyde, glycerin, and baptisia.

Ozomoru. (157)

This is stated to be made according to the formula of Dr. C. H. Whitman.

Each fluidounce is stated to contain

Cod liver oil (sterilized).....dr.	4
Hypophosphites lime and soda.gr.	10
Guaiacol	m. 3
Pancreatin	gr. 3
Glycerin	per cent 15
Alcohol	per cent 5

Water,

Irish moss, each, q. s.

"Ozone, to saturation."

Ozomulsion. (156)

On the wrapper the statement is made that this is an emulsion of cod liver oil, guaiacol, glycerin, and the hypophosphites of lime and soda, also that it contains 1½% of alcohol. On a circular it is stated that the following is the formula: Each fluidounce contains 50% of cod liver oil, 4 drops of guaiacol "thoroughly ozonized."

Ozonized Water.

This is said to contain 1 or 2 parts of potassium permanganate dissolved in 500 parts of water.

Ozotone. (Elixir Phosphorus et Strychnia Comp. (157)

Each fluidram is stated to contain

Free phosphorus	gr. 1/100
Strychnia nitrate	gr. 1/60
Tr. cinchona	m. 3
Tr. gentian comp.	m. 1
Tr. matricaria	m. ½
Tr. calumba	m. ½
Absolute alcohol.	
Glycerin.	
Aromatics.	

P. P. P.

This is said to contain the fluid extracts of green poke-root, green prickly-ash bark, stillingia and sarsaparilla, with compound tincture of gentian, potassium iodid and simple syrup.

Pads.

Years ago it was quite common to wear medicated "pads" for the treatment of diseases. There were kidney pads and liver pads, also anti-constipation pads and uterine pads. The following is an example of one of the latter:

Podophyllum, powder	av.oz. 3
Aloes, powder	av.oz. ½
Culver's root, powder.....	av.oz. ½
Cypripedium, powder	av.oz. ½
Comp. ext. of colocynth....	av.oz. ½
Croton oil	fl.dr. 1
Oil of sassafras.....	fl.dr. 1

Mix and make into a pad which was directed to be worn just below the pit of the stomach.

The following formula has been given for an uterine pad:

Blue cohosh	av.oz. 1
Witch-hazel	av.oz. 1
Cinchona	av.oz. 1
Angelica	av.oz. ½
Ergot	av.oz. ¼
Guaiac wood	av.oz. ¼
Oil of eucalyptus	fl.dr. 4
Oil of tansy.....	fl.dr. 2
Oil of lavender.....	fl.dr. 2

Mix the drugs, reduce to moderately fine powder, incorporate the oils, and make into an oblong pad, which is to be worn over the lower part of the abdomen.

See also Holman's Liver Pad.

The following formula has been given for a stomach pad:

Bayberry	av.oz. 1
Lupulin	av.oz. 1
Sassafras bark	av.oz. 1
Myrrh	av.oz. 1
Wild ginger	av.oz. ½
Cypripedium	av.oz. ½
Capsicum	gr. 60
Oil of fennel.....	fl.dr. 2
Oil of clove.....	fl.dr. 1

Mix the drugs, reduce to moderately fine powder, and incorporate the oils. Make into an oblong pad to wear over the stomach.

The following is intended for a kidney pad:

Black cohosh	av.oz. 1
Gum benzoin	av.oz. 1
Gum guaiac	av.oz. 1
Juniper berries	av.oz. 1
Queen-of-the-meadow	av.oz. 1
Digitalis	av.oz. 2
Oil of juniper.....	fl.oz. 1½

Mix the drugs, reduce to moderately fine powder, incorporate the oil, and make into an oblong pad.

Page's Plain Hypophosphites.

This preparation is stated to contain in each fluidram 3 grains of calcium hypophosphite and 2 grains of sodium hypophosphite.

Page's Compound Syrup of Hypophosphites.

This is stated to contain calcium, sodium and manganese hypophosphites, strychnine and quinine sulfates, and iron pyrophosphate.

Pain Expeller.

Tr. capsicum annum.....	70.0
Oil of rosemary.....	2.0
Oil of clove.....	2.0
Oil of chamomile, volatile.....	0.15
Oil of lavender.....	0.5
Oil of lemon.....	0.5
Oil of neroli.....	0.5
Medicinal soap	0.5
Camphor	1.5
Spirit of peppermint.....	10.0
Comp. spirit of melissa.....	10.0
Ammonia water	8.0
Tincture of caramel, q. s.	

The latter is composed of equal parts of caramel, alcohol and water.—Pharm. Centralh.

Paine's Celery Compound.

This preparation is stated to contain celery seed, calisaya, cascara sagrada, senna, prickly ash bark, sarsaparilla, hops, ginger, dandelion, mandrake, black haw, gentian, chamomile, black cohosh, yellow dock, potassium nitrate, dilute phosphoric acid, glycerin and water.

Palmetol Pills.

See Pil. Palmetol.

Palmettine Hypophosphites. (207)

This preparation is stated to contain in each fluidounce saw palmetto berries,

fresh, 120 grains; lime hypophosphite, 1½ grains; and iron, potash and manganese hypophosphites, each 1 grain.

Palmetto Cordial. (Cordial Palmetto Comp.) (117)

This is stated to contain the virtues of ripe berries of *Serenæa serrulata* and true *Santalum album*, each fluidram representing saw palmetto, 20 grains, sandalwood, 10 grains, and aromatics.

Palmetto Tonic. (148)

This is stated to contain saw palmetto, sandalwood, couch grass, damiana, pichi, corn silk, and aromatics.

Palmetto Suppositories. (148)

These are vaginal suppositories, each one containing 10 grains of solid extract of saw palmetto combined with antiseptics.

Palmiacol. (Cetiocol.)

This is described chemically as cetyl-guaicyl. It is a liquid insoluble in water but soluble in alcohol, ether and chloroform. It is said to have properties similar to creosote and guaiacol and is used internally for tuberculosis and chronic bronchitis. It is put up in gelatin pearls containing 3 minims each.

Palmo-Santal.

See Palmothal.

Palmothal. (142)

This is stated to be a combination of the fresh berries of saw palmetto, fresh stigmata of corn silk, fresh rhizomes of couch grass, and santal.

Palpebrine. (64)

This is stated to contain as "active principles" boric acid, mercury bichlorid, tincture of opium, zinc sulfate, glycerin, and distilled and camphorated waters.

Panase. (187)

This is described as a combination of all the pancreatic enzymes in a highly active form. It is said to be capable of dissolving 200 times its weight of starch in 10 minutes. It is a light yellowish-white powder of a slight odor and a somewhat mucilaginous taste. It is marketed in the form of powder, 2-grain

tablets, and an essence, each fluidram of which contains $2\frac{1}{2}$ grains of the ferment.

Pancreatin-Pepsin Comp. (108)

This is stated to contain pepsin, pancreatin, extract of nux vomica, ginger, bismuth subnitrate, and sodium bicarbonate. It is put up in tablet form.

Pancreatokinase.

This is a mixture of pancreatin and eukinase.

Pancreo-Bismuth.

This is stated to contain pancreatin, bismuth, sodium bicarbonate and ginger.

Pancreo-Digestin.

See Elixir Pancreo-Digestin.

Pancreo-Digestin Powder. (188)

This is stated to contain ptyalin, pepsin, pancreatin, and lactic and hydrochloric acids.

Pancreopepsine, Liquid. (212)

This is stated to contain pancreatin, pepsin, and lactic and muriatic acids.

Pancreobilin. (167)

This is the formula as given by the manufacturers:

Purified ox-bilegr. $\frac{3}{4}$
Pure extract pancreas.....gr. $\frac{3}{4}$

It is put up in the form of a liquid and pills.

Pancreobilin Comp. Pills.

These are put up in two forms called mild and strong. The mild form is stated to contain

Ox-bile, inspissated.....gr. 1
Pancreatic extractgr. $\frac{1}{4}$
Comp. ext. colocynth.....gr. $\frac{1}{4}$
Quinine sulfategr. $\frac{1}{2}$
Extract taraxacumgr. $\frac{3}{4}$

The strong form differs only in containing $\frac{1}{2}$ grain of extract of colocynth.

Pancreo-Pepsin. (181)

This is stated to contain pancreatin, pepsin, vegetable ptyalin, lactic and hydrochloric acids, and sugar of milk.

Pancreo-Pepsin Elixir.

Each fluidram is stated to represent 10 grains of pancreo-pepsin.

It is also put in various combinations,

such as with beef, iron and wine, with bismuth, with bismuth and strychnine, with gentian and iron chlorid, and with phosphate of iron, quinine and strychnine.

Pancreo-Pepsin, Liquid.

Each fluidounce is stated to represent 80 grains of pancreo-pepsin.

Panjecorine. (187)

This is the name applied to the extract made from the fresh livers of the cod-fish. It is used in making the wine of cod liver oil.

Pankreon.

This is a compound of pancreatin with 10% of tannin. It passes through the stomach, being able to resist gastric digestion. It is a grayish-red powder of a not unpleasant taste. It is insoluble in water and in dilute acids of the strength of the gastric juice. It is used in pancreatic diabetes, intestinal indigestion, gastritis, aepsia, etc., in doses of $7\frac{1}{2}$ grains 3 times a day.

Panopepton. (70)

This is a description as given by the manufacturers: Content of alcohol by volume 19.7%, by weight 16%; total dry solid, 22%; proteids (N x 6.25), 6.3%; carbohydrates, 13%; inorganic salts (ash), 1%; free from cane sugar or chemical preservatives. It is said to be prepared from beef and wheat by digestion with gastric and pancreatic juices. The substance obtained by the digestion is mixed in fixed proportion of protein and carbohydrate, on the basis of actual assay, sterilized, concentrated in vacuo, and dissolved in fortified Spanish sherry wine. It is used as a liquid food. The dose for an adult is 2 to 4 teaspoonfuls several times a day and at bedtime; for infants, from a few drops to 30 minims.

Pan-Peptic Elixir.

The manufacturers state that each dessertspoonful represents 1 pan-peptic tablet in solution.

Pan-Peptic Tablets. (182a.)

The composition as stated by the manufacturers is 1 grain each of pure pepsin

and pure pancreatin, $\frac{1}{4}$ grain caffeine and q. s. each of acid lactophosphate of calcium and celery.

Panzyne. (187)

This is stated to be composed of vera diastase, pancreatin, pepsin, and rennin, with carminatives and aromatics. It is marketed in the tablet form.

Papain. (Papayotin.)

This is the concentrated ferment from the juice of the papaw fruit. It is an amorphous, whitish powder which is soluble in water and glycerin.

It is employed as a digestive ferment. It digests albuminous matter, acting in acid, alkaline or neutral liquids. When given internally, the dose is 2 to 5 grains after meals.

Papayans. (20)

These are 5-grain tablets which are stated to contain the digestive principle of the fruit of *Carica papayac*, combined with willow charcoal, sodium bicarbonate, and aromatics.

Papler Fayard.

The following is the formula given in the expired foreign patent:

Linseed oil	parts 500
Turpentine	parts 500
Lead acetate	parts 50
Garlic (chopped fine)	parts 30
Yellow ochre	parts 30
Red lead	parts 15

Boil the garlic with the oil, stirring constantly, strain, and add the other substances. The resulting compound is next spread on tissue paper, either with a sponge or a broad camel's hair pencil, such as is used by gilders, and allowed to dry at the ordinary temperature, or in a heated room, for about two weeks. When the paper is dry, spread on it the following mixture:

Olive oil	parts 200
Yellow wax	parts 6
Red lead	parts 100

Another process is said to be carried out by making a tincture from 3 drams euphorbium, 6 drams cantharides, and alcohol 4 fluidounces, and dissolving in the filtered tincture 3 drams Venice tur-

pentine. Fine tissue paper is dipped into this mixture and then dried.

This paper is used as an application for rheumatism, gout, sprains, etc.

Papillaud's Antimony Granules.

These are pills weighing 0.1 g. which contain, according to Dorvault, antimony iodid, but according to Blaser are composed of antimony arsenate, 0.0005; tragacanth 0.01, and red colored sugar, 0.04.

Parachlorsalol. (Parachlorphenol Salicylate.)

This is in fine, white, almost tasteless and odorless needles, soluble in alcohol or ether, insoluble in water. It is used as an internal or external antiseptic like salol. Dose: 2 to 4 grams, 30 to 60 grains per day, in divided quantities.

Paraform. (Paraformaldehyde—Trioxymethylene—Triformal.) (130)

When formaldehyde in aqueous solution is heated for a sufficient length of time a polymeric form is obtained in the form of a white, crystalline powder which is insoluble in water. This is known as paraform. It is used as an internal antiseptic and astringent in cholera, diarrhea, dysentery, etc., the dose being 8 to 15 grains; for children $\frac{3}{4}$ to $1\frac{1}{2}$ grains every 2 hours. It is also used as a surgical dressing, for the generation of formaldehyde (by heating), and in dentistry for the disinfection of root canals.

Paraganglin.

This is a preparation of the suprarenal bodies of Italian origin. It is supposed to be the serum of the medullary substance of the suprarenal bodies. It is a clear, yellowish fluid of a sweetish taste. The dose is 5 to 10 drops several times daily.

Paraldehyde. (Elaldehyde.)

This is a colorless, transparent liquid of a strong characteristic odor and a burning taste. It is soluble in 8 parts of cold water, 16 parts of boiling water, but is miscible in all proportions with alcohol, ether, fixed or volatile oils. It

is used as a hypnotic in doses of 10 to 30 minims. It should be preserved in well-stoppered, amber-colored bottles in a cool place.

Paraldehyde Elixir, Robinson's.

See Robinson's Elixir Paraldehyde.

Para-Lysol.

This is stated to be a combination of potassium and cresols. Analysis showed 8.3% of the former and 91.7% of the latter, which corresponds to 1 molecule of potassium to 3 molecules of cresol. It crystallizes in non-hygroscopic, white needles but is marketed in tablets of about 1 gram each, which are packed in glass tubes. It is a mild, non-poisonous antiseptic.

Paranephryn. (130)

This is a substance obtained from suprarenal capsules without the aid of acids and alkalies and is entirely free from albumoses and peptones. It is a yellow, friable mass, soluble in water. It is supplied as a 1:1000 solution in water, containing 0.6% of sodium chlorid. It is used as a hemostatic.

Paraplast.

This is a preparation devised by Unna and is similar to gutta percha mull. It consists of fine thick cotton web on which is spread a plaster mass of rubber, wool-fat, resin and dammar. The latter is medicated with zinc oxid, mercury, salicylic acid, chrysarobin, etc.

Pararegulin. (96)

This is an emulsionized mixture of liquid paraffin combined with 10% of aqueous extract of cascara. It is marketed in gelatin capsules each containing 3 grams of the emulsion.

Paratoloid.

See Tuberculin.

Paraxin. Dimethylaminopara-xanthin. (26)

This is in white crystalline mass, slightly soluble in cold water, freely so in hot water. It is recommended as a diuretic.

Parisol.

This is described as a condensation product of formaldehyde and saponified naphtho-quinones, which is recommended as a non-toxic antiseptic and odorless disinfectant.

Parsons' Local Anaesthetic.

Chloroform	parts 6
Tincture of aconite.....	parts 6
Tincture of capsicum.....	parts 2
Tincture of pyrethrum.....	part 1
Oil of clove.....	part 1
Camphor	part 1

Dissolve the camphor in the chloroform, add the oil of clove, and then the tinctures.—Dr. Parsons.

Pas-Avena.

This is stated to be a compound of passiflora, Avena sativa, and somnalgine. The latter is stated to be a new chemical of the formula $C_{30} H_{50} N_6 O_8$.

Paskola.

According to Dr. Eccles, this is similar:

Glucose syrup	pound 1
Hydrochloric acid	drops 50
Sulfurous acid, U. S. P.,	
freshly prepared.....	drops 6 or 8

Pasta Mack.

This is stated by Ecksten to be composed of 27 parts of rice starch and 73 parts of effervescing powder (sodium bicarbonate, 10, tartaric acid, 9), perfumed and made into tablets. This preparation is added to the water used for a bath when carbonic acid gas will be evolved.—Ph. Ztg.

Pasteurine. (135)

This is given as the formula: Oils of cassia, gaultheria and eucalyptus, menthol, glycerin, 3/10% of formaldehyde, and saturated solution of boric acid.

Pasteurine Anti-Constipation Tablets.

These are stated to contain

Salol	gr. $\frac{1}{2}$
Aloin	gr. $\frac{1}{8}$
Resin of podophyllum.....	gr. $\frac{1}{8}$
Extract of belladonna leaves.....	gr. $\frac{1}{8}$
Oleoresin of capsicum.....	gr. $\frac{1}{40}$
Strychnine	gr. $\frac{1}{80}$
Oils of cinnamon, peppermint	
and eucalyptus.	

Patch's Exarysis Tablets.

See Exarysis or Exhaustion Tablets.

Patch's Leucogon Tablets.

See Leucogon Tablets.

Patterson's Pastilles.

Bismuth subnitrate	10.0
Calcined magnesia	10.0
Sugar	90.0
Tragacanth	0.2
Orange flower water, to make 100 pastilles.	—H.

Patterson's Powder.

Bismuth subnitrate	5.0
Calcined magnesia	5.0
Sugar	80.0
	—H.

Pautauberge's Solution. (210)

Each tablespoonful is stated to contain 10 centigrams of creosote and 50 centigrams of "hydrochloro-phosphate of lime." It is recommended for tuberculosis, broncho-pulmonary affections, scrofula, rickets, etc.

Pava Pepsin Comp. (135)

This is stated to be a combination of the digestive ferments with caffeine and pineapple juice.

Peacock's Bromides. (Syr. Brom. Comp.)

Each fluidram is stated to contain 15 grains of the combined bromids of potassium, sodium, calcium, ammonium, and lithium.

Pectorin.

This is a name given to pastilles containing potassium sulfoguaiacolate.

Pediculin.

This is a substance introduced in Germany as a remedy for lice and other similar parasites. It consists of 65% of powdered chalk and 35% of commercial naphthalin.

Pegnin. (Milk Sugar Rennet.)

This is prepared by mixing rennin, the milk-curdling enzyme of calf's rennet, with milk sugar and sodium chlorid. It is a fine white powder, readily soluble in water and forming a solution which coagulates the casein of milk. It is used for the purpose of coagulating milk. Cow's milk so coagulated is said to be

particularly serviceable for infant feeding and well adapted as a food for adults in stomach affections, being much more digestible than raw milk. 60 to 75 grains of pegnin are required for 1 pint of milk, which should previously have been boiled and cooled to about 40° C. The mixture, after brief shaking, should be allowed to stand for 2 or 3 minutes or until it is entirely coagulated, and then shaken for several minutes until the coagulum has been converted into a smooth, homogeneous mixture, and set aside in a cool place. It is then to be transferred to the nursing bottle as required and heated in warm water to the body temperature (about 38° C.) before feeding to infants.

Pelagin.

A remedy for seasickness said to be a solution of antipyrine, caffeine and cocaine.

Peleg White's Salve.

See White's Salve.

Pelletierine Tannate. (Punicine Tannate.)

This is a light yellow, odorless, amorphous powder of an astringent taste. It is soluble in 235 parts of water, 13 of alcohol at 25° C. and in warm diluted acids but is insoluble in chloroform. It should be kept in small, well-stoppered, dark amber-colored bottles. It is as an anthelmintic, especially for tapeworms. It is given in doses of 3 to 8 grains in an ounce of water, which are to be followed in a half hour by a cathartic.

Pellotine Hydrochlorid.

This is an alkaloidal salt derived from Anhalonium Williamsi, a Mexican cactus. It is in colorless crystals which are soluble in water and slightly soluble in alcohol. It is used as a hypnotic in doses of 1 to 1½ grains.

Pemzed.

This is described as an infant food consisting of pure milk sugar with the addition of small amounts of calcium hypophosphite and sodium chlorid.

Penne's Liqueur Antiseptique.

Carbolic acidparts 4
 Hydrobromic acidpart 1
 Diluted alcoholparts 100

It is used against the stings of insects and bites of animals.—H.

Penne Suppositories.

These contain 1 to 2 grains of picratol with boroglyceride and glyco-gelatin.

—Pharm. Centralh.

Pental. (Trimethylethylene—Betasoamylene.)

This is a colorless liquid soluble in all proportions of alcohol, ether and chloroform, but insoluble in water. Employed as an anesthetic in minor surgery, such as extracting teeth, etc.

Dose: Inhalation, 3 to 5 drams.

Penoform.

This is a German snuff whose chief ingredient is the suprarenol gland. It is used for hay fever and in the various forms of coryza.

Pepdilactic Elixir.

This elixir is said to be a palatable form of pepdilactine (which see).

Pepdilactine. (198)

The synonym given by the manufacturers is "compound pepsin powder." It is described as containing pepsin, ptyalin, pancreatin and lactic and hydrochloric acids.

Pepsin and Wafer Ash.

The following makes a suitable preparation of this kind:

Pepsin, puregr. 128
 Fluid extract of wafer ash..f.oz. 2
 Glycerinf.oz. 8
 Water, to make.....f.oz. 16

Mix the pepsin with the glycerin and 6 fluidounces of water; agitate occasionally until the pepsin is dissolved; mix with the fluid extract, set aside for a day or so, and filter clear.

Pepsin Cordial. (159)

Each fluidram is stated to digest 3000 grains of coagulated and disintegrated egg albumin.

Pepsol.

This is stated to be a combination of one of the coal tar derivatives, phenolid, combined with pepsin and sodium bicarbonate. Elsewhere in this work, phenolid is stated to consist of acetanilid and sodium salicylate.

Pepso-Ptelea. (Pepsin and Wafer Ash.) (17)

This is stated to contain glycerin, but no spirit. See Pepsin and Wafer Ash, which contains pepsin, wafer ash and glycerin.

Peptenzyme. (167)

This is the process or formula given by the makers:

We take 1000 each of the following glands: Salivary, peptic, pancreatic, Lieberkuhn's and Brunner's, and the alcoholic extract of 1000 spleens and livers, so that any quantity of it, either 1 pound or 1 grain, contains a proportional quantity of the enzyme principles of the whole series of digestive organs. To 6 parts of this isolated protoplasmic, active and latent enzyme mixture in powdered form and slightly benzoated, and separated mechanically as described above, add 9 parts of powdered sugar, 9 parts of powdered milk sugar, 1 part of citric acid.

Peptenzyme Elixir.

This is stated to contain 16.14% by volume or 13.08% by weight of alcohol, also nucleo-enzymes of the salivary, peptic and intestinal glands, of the pancreas and of the spleen.

Pepto-Brom-Eigon.

This is one of the eigons (which see) and contains 11% of bromin. It is a whitish powder soluble in water. It is used in place of the bromids. The dose is the same as that of potassium bromid.

Pepto-Fer du Dr. Jaillot.

This is said to have for its basis an organic compound of iron, chloropeptonate of iron, a combination of peptone and perchlorid of iron, a neutral salt, and entirely dialyzable.

Pepto-Iodo-Eigon.

This is a yellowish, odorless, almost tasteless powder, soluble in water, and contains 15% of iodine. It is one of the eigons (which see). It is intended as a substitute for the iodids and is given in the same doses.

Pepto-Mangan, Gude's.

(Liquor Mangano-Ferri Peptonatus.)

Each tablespoonful is stated to contain the equivalent of 3 grains of metallic iron and 1 grain of metallic manganese. It is used for anemia, chlorosis, etc.

Peptonic Pills. (221)

These are compressed tablets, weighing nearly 5 grains. They are stated to contain 1 grain of pure pepsin, 1 grain of pure pancreatin, and lacto-phosphate of lime and lactic acid.

Peptonized Glycerophosphates. (141)

Each fluidounce is stated to contain
 Calcium glycerophosphate ...gr. 6
 Magnesium glycerophosphate...gr. 2
 Potassium glycerophosphate...gr. 2
 Sodium glycerophosphate....gr. 2
 Iron glycerophosphate.....gr. 1
 Tincture of nux vomica.....m. 1
 Pepsingr. 8
 Fresh kola nutgr. 12

Peptopancreatine Compound Powder. (192)

This is stated to contain pepsin, pancreatin, ptyalin, diastase, and lactic and hydrochloric acids.

Peptopancreatine Compound Elixir.

Each fluidounce is stated to contain 40 grains of peptopancreatine compound.

Peple Lecibrin. (70)

These are stated to present the complex, organic, phosphorized-fat constituent of the brain in combination with nucleo-proteids.

Peple Pancro Hepatic. (70)

Each one is stated to contain 3 grains of extractum pancreatis and 1 grain of inspissated ox-gall.

Perborate of Sodium. (NaBO₃, 4 H₂O.)

This is a white powder which when dissolved in water at once produces hy-

drogen peroxid. It is non-toxic and non-irritant, antiseptic and mildly astringent, and is applicable in powder form for insufflation. It is also said to be adapted for treatment of diseases of the eye, ear and throat.

Percoll.

This is a form of adhesive plaster in which the adhesive is applied to parchment instead of linen or muslin. When applying this plaster the back surface is to be moistened with water to give it the required pliability. On drying the plaster becomes stiff again.

Percutilan.

See Prævalidin.

Perdynamin.

This is an iron preparation said to contain iron in the form of hemoglobin combined with albumen. It is used as a nutritive.

Perglutyl.

This is described as a solid form of hydrogen peroxid, obtained by dissolving gelatin, with more or less glycerin, in hydrogen peroxid, with the aid of a gentle heat, to afford a solid mass on cooling. The quantity of gelatin and glycerin may be varied so as to form a soft mass or a hard one which may be reduced to powder. The preparation is intended for use internally and externally in all cases where the antiseptic and disinfectant properties of hydrogen peroxid are required.—Ph. Ztg.

Perhydrol. (130)

This is described as a 30% solution of hydrogen dioxid which is free from acid. The advantage claimed for this preparation is less irritating on account of the absence of acid. By suitable dilution a preparation is obtained equivalent to the official solution of hydrogen peroxid.

Peristaltic Pills. (212)

These are stated to contain each

Aloingr. 1/4
 Extract of belladonna.....gr. 1/8
 Ipecacgr. 1/16
 Strychninegr. 1/60

Peristaltic Aperient Pills are said to contain each

Aloin	gr. 1/10
Belladonna juice	gr. 1/20
Ipecac	gr. 1/30
Strychnine sulfate	gr. 1/100
Peristaltic Comp. Pills contain each	
Salol	gr. 2
Ingluvin	gr. 1/2
Strychnine sulfate	gr. 1/100
Aloin	gr. 1/10
Ext. belladonna	gr. 1/30

Peristaltic Mercurial Pills contain each

Aloin	gr. 1/4
Ext. belladonna	gr. 1/8
Strychnine	gr. 1/60
Ipecac	gr. 1/16
Calomel	gr. 1/10

Peronine. (Benzylmorphine Hydrochlorid.)

This is a bulky white powder, bitter in taste, which is freely soluble in water and diluted alcohol.

This substance is a narcotic, being allied to morphine and codeine. It is supposed to be safer than morphine and more effective than codeine. It is used like morphine and codeine to induce sleep, to relieve pain and the coughing accompanying bronchitis and phthisis. It is given in doses of $\frac{1}{4}$ to $\frac{3}{4}$ grain. The maximum single dose is 1 grain, the maximum daily dose, 4 grains.

Peroxoles.

The peroxoles are the class of preparations represented by camphoroxol, menthoxol and thymoxol, which see.

Perry's Moth & Freckle Lotion.

According to Chandler's analysis, 1 fluidounce of this liquid contains 2.67 grains of mercury and 0.99 grains of zinc (corresponding to 3.61 grains of corrosive sublimate and 4.25 grains of crystal zinc sulfate). The sediment contains small amounts of mercury, lead and bismuth.

Persodine.

This is a name applied to a solution of persulfates, chiefly sodium persulfate.

Personne's Iodized Oil.

Dissolve 1 gram of iodine in 200 grams of sweet almond oil.—H.

Perugen.

This is a synthetic substitute for peru balsam, containing 60% of cinnamein.

Peruol.

This is a name given to a 25% solution of benzoic acid benzylester, dissolved in castor oil. This ester is said to be the therapeutically active constituent of peru balsam. The liquid is colorless, odorless and non-irritant, and is recommended as a substitute for peru balsam in scabies and other affections of the skin.

Peruscabin.

This is a name given to pure benzoic acid-benzyl ester, the principal therapeutic constituent of peru balsam.

Peters' Peptic Essence Comp.

This is stated to contain pure pepsin, pure pancreatin, pure diastase, and pure lactic and hydrochloric acids preserved in solution with glycerin, and made palatable by the addition of aromatics; it is said not to contain alcohol or sugar, and that 1 fluidounce will digest 3000 parts of coagulated albumen.

Petro-Coco. (194)

This is described as a specially refined form of petroleum, to which chocolate has been added. It is advocated as a nutritive to replace cod liver oil emulsions.

Petrogen. (221)

This is described by the manufacturers as a modified mineral oil. It is put up in combination with camphor, carbonic acid, creosote, guaiacol, ichthyol, iodine, iodoform, and menthol.

Petrol. (198)

The synonym given by the manufacturers is "petrolatum."

This is also the European name for gasoline.

Petrol Oil. (198)

The synonym given by the manufacturers is "petrolatum oil."

Petrolan.

This is the name for a new ointment base, a combination of mineral oils with soaps, etc.

Petrole-Alba. (94)

This is described as a colorless, odorless and tasteless oil from pure Russian petroleum.

Petrole-Alba Comp.

This is stated to contain camphor, menthol, eucalyptol, hydrastine hydrochlorid, and oil of gaultheria with petrole-alba.

Petrolene. (181)

This is described as a pure, colorless hydrocarbon oil.

Petroleum Compound Emulsion. (182a)

Each fluidounce is stated to contain 33⅓% of refined petrolatum oil and 10 grains of the combined hypophosphites of calcium and sodium.

Petrolatum Compound Pills. (212)

These pills are stated to contain each
 Petroleumgr. 1
 Targr. 1
 Magnesium carbonategr. 1/2
 Strychnine sulfategr. 1/100
 Oil of wintergreen.....m. 1/20

Petrosulfol.

See *Ichthyolum Austriacum*.

Petrox.

This is the saponated petrolatum of the N. F. It is in two forms, a solid and a liquid. The latter may be combined with iodine, carbolic acid and many other remedies applied externally.

Peptic Digestant.

This is stated to be "composed of pepsin, pancreatin, diastase, hydrochloric and lactic acids, combined with an aromatic vehicle."

Phagocytin.

This is a sterilized solution of sodium nucleinate intended for hypodermic use in the treatment of lowered conditions of the nervous system. Each cc. is stated to contain 0.05 gm. of salt.

Phalon's Vitalia.

According to Chandler's analysis, this consists of two liquids, the one being a solution of sodium hyposulfite, the other a clear, reddish liquid containing about 3% of lead.—H.

Pharyngine.

This is a preparation containing thymol and eucalyptol used as a gargle in catarrhal affections, etc.

Phaselin. (4)

This is described as the principle derived from *Dolikos mexicana*, a Mexican bean. It is recommended as an aid to digestion. It is put up in powder and tablet forms.

Phenacetin. (Paracetphenetidine—Phenetidine.)

This is a colorless, tasteless crystalline powder, very sparingly soluble in water, soluble in 16 parts of alcohol. It is employed as an antipyretic and antineuralgic, in doses of 8 to 15 grains. Used for catarrhs, colds, influenza, etc.

This compound is of special interest because it is the base or nucleus of many other synthetic compounds which are used medicinally such as kryofin, citrophen, pyramidon, lactophenin, triphenin, apolysin, phenocoll, etc.

Phenaceto-Caffeine. (212)

This is a granular effervescent salt, each dessertspoonful of which is stated to contain 5 grains of sodium bromid, 3 grains of phenacetine, and 1 grain each of caffeine and celery.

Phenalin.

This is one of the various names applied to phenolphthalein. It is put up in tablets of 0.05 g. each.

Phenanmine.

Same as Phenocoll Hydrochlorid, which see.

Phenartol. (76)

This is described as a combination of phenol with benzartol (which see).

Phenatol.

This is said to be a mixture of acetanilid, caffeine, and sodium bicarbonate, carbonate, sulfate and chlorid.—Coblentz.

Phenazone.

This is a name for antipyrin.

Phenocoll Hydrochlorid. (Amido-acetphenetidin Hydrochlorid—Phenamine.) (178)

This is the hydrochlorid of a synthetic base obtained by the combination of phenetidin and glycocoll. It differs from phenacetin in that one hydrogen atom of the acetyl group has been replaced by N H₂. It is a white microcrystalline powder, soluble in 16 parts of water at the ordinary temperature, very soluble in hot water and alcohol. It is incompatible with soluble hydroxids or carbonates. It is similar to phenacetin in its effects and acts an antipyretic. It is also used in rheumatic fever. The dose is 5 to 25 grains dissolved in water before taking; hypodermically the dose is 4 to 8 grains.

Phenocoll Salicylate.

See Salocoll.

Phenol-Bismuth. (Bismuth Carbolate.)

This is a white, non-toxic, non-caustic powder, almost devoid of odor and taste, containing 80% of bismuth oxid and 20% of phenol in combination. It is recommended as an antiseptic in gastrointestinal gastritis, dysentery, typhoid fever, etc. The dose is 15 to 75 grains daily.

Phenol Camphor. (Camphorated Phenol.)

Camphor and crystal carbolic acid, when mixed, form an oily liquid, which does not possess the caustic properties of carbolic acid. The mixture is made preferably with 3 parts of camphor to 1 of acid by weight. The product is insoluble in water, but soluble in alcohol, ether, chloroform and oils. It is a useful antiseptic and disinfectant.

Phenol Sulforicinate.

This is a thin, aqueous or a syrupy and viscid liquid (according to different methods of manufacture), yellowish in color, of ethereal odor, and soluble in water and alcohol. It is used in solutions of 20 to 30% strength as an application in diseases of the nose and throat

Phenolid.

According to analysis, this has been shown to be a mixture of acetanilid, 58 parts, and sodium salicylate, 43 parts, or approximately:

Acetanilid	parts 4
Sodium salicylate	parts 3
	—Pharm. Rdsch.

Phenolphthalein.

This is a crystalline or amorphous powder, white or grayish white, soluble in 600 parts of water and in 10 of alcohol. It is used in medicine as a purgative, the adult dose being 1½ to 3 grains, although as much as 8 grains may be given with safety. It is of special interest at present because it is the basis of many proprietary or semi-proprietary laxative pills and tablets.

Phenosalyl.

Carbolic acid	parts 90
Lactic acid	parts 20
Salicylic acid	parts 10
Menthol	part 1

Mix by fusing acid and adding other ingredients.

Phenthol. (154)

This is an antiseptic and deodorant stated to contain 95% of pure phenol.

Phenylacetamide.

Same as Acetanilid, which see.

Phenylacetic Acid.

This is in white, shining laminæ which are soluble in alcohol, ether and hot water. It is recommended as an internal antiseptic and antitubercular. The dose is 10 drops, gradually increased to 20, of a 1 to 6 alcoholic solution, 3 times daily in water.

Phenosal. (Phenetidin Aceto-Salicylate.)

This is in small colorless crystals of a sour taste and sparingly soluble in water, alcohol and ether. It is used as an antipyretic and antirheumatic in doses of 8 grains.

Phenyo-Caffein.

The manufacturers' circular states that the principal ingredients of these pills, or "sugar-coated powders," are phenylactamid (acetanilid), 2 grains, caffen and camphor.

Phesin.

This is a sulfo derivative of phenacetin. It is a brown powder of a saline taste, readily soluble in water. Its properties are about the same as those of phenacetin. The dose is 8 to 15 grains.

Phillip's Emulsion.

This is the formula given:

Cod liver oil.....	50%
Wheat phosphates	25%
Glycerin, mucilage, pancreatin, sugar and water.	

Phonozyme.

This is a name given by Dr. T. O. Summers to this mixture:

Peptenzyme	gr. 60
Boric acid	gr. 30
Glycerin	fl.dr. 4
Bitter almond water.....	fl.oz. 3½

Phorxal.

This is a nutritive preparation derived from ox-blood and containing iron and phosphorus. It is an odorless and tasteless powder, soluble in aqueous liquids, and given in doses of ½ to 1 ounce daily in soup, milk, cocoa, etc.

Phosote or Phosphate. (Tricreosote Phosphate.)

This is a nearly colorless, syrupy liquid, of a faint odor and taste of creosote. It contains 80% of creosote and 20% of phosphoric anhydride. It is recommended for tuberculosis in place of creosote, in doses of 15 to 45 minims daily. Sometimes it is used hypodermically.

Phos. Tincture Cinchona Compound.

This is said to contain in every 10 minims 1 minim each of tinctures of nux vomica, ignatia and matricaria; 4 minims of tincture of cinchona, ½ minim each of tinctures of gentian and columbo; 2 minims of aromatics, and 1/300 grain of tr. phos. (c. p.).

Phosphatic Emulsion of Cod Liver Oil.) (160)

Each tablespoonful is stated to contain 50% by volume of cod liver oil, about 1½ grains of free absolute phosphoric acid, ¼ grain of calcium hypophosphite, and ¼ grain each of sodium

and potassium hypophosphites and iron lactate.

Phospherrin.

A mixture of ferric chlorid, phosphoric acid and glycerin.—Coblentz.

Phospho-Albumen, Special Formula No. 33.

This is the composition as given by the manufacturers:

Phospho-albumen (ext. testes, spinal cord and brain, containing phosphorized albumen, lecithin, spermine, nuclein)...	gr. 3
Strychnine sulfate	gr. 1/50
Zinc phosphid	gr. 1/10
Gold chlorid	gr. 1/60

It is recommended as an aphrodisiac.

Phospho-Caffein Comp.

Each dessertspoonful is stated to contain

Caffeine	gr. ½
Phosphoric acid	gr. ½
Ext. celery seed.....	gr. 1
Antipyrin	gr. 1
Sodium bromid	gr. 7

Phospho-Glycerate of Lime.

See Chapoteaut's Phospho-Glycerate of Lime.

Phospho-Lecithin. (211)

Each dessertspoonful is stated to contain

Lecithin	gr. ¼
Sodium glycerophosphate ..	gr. 2
Calcium glycerophosphate..	gr. 1
Potassium glycerophosphate	gr. 1
Strychnine glycerophosphate	gr. 1/250
Glycerophosphoric acid, q. s.	
Avenine	gr. 1/150

Phospho-Muriate of Quinine Compound.

According to the manufacturers, this is a combination of the "wheat phosphates" with strychnia and muriate of quinine. The formula is given thus:

Each fluidram contains 1¾ grains of potassa, 1 grain of magnesia, ¼ grain of lime, 1 grain of iron, all in the form of phosphates; ¼ grain of quinine muriate, 1/120 grain of strychnine, 2 grains of free phosphoric acid, and simple syrup, q. s.

Phospho-Neurine. (97)

Each fluidram is stated to contain

Phosphorusgr. 1/200

Arsenous acid.....gr. 1/80

Ext. nux vomica.....gr. 1/8

Hydriodic acidgr. 1

Ext. coca leaves (green)...gr. 6

With the "diastasic ferment" and organic phosphates from the cereals.

Phosphoric Elixir.

See Robinson's Phosphoric Elixir.

Phosphorus Mixture Comp.

See Mixture Phosphorus Comp.

Phosphotal. (Creosote Phosphate.) (77)

This is a thick, yellowish, oily liquid, of the odor and taste of creosote. It is soluble in alcohol, chloroform and oils, and contains 90% of creosote. It is used in place of the latter on account of being more readily borne by the stomach. The dose is 3 to 15 minims 3 times a day.

Phthisocan.

This is a syrup containing potassium guaiacol-sulfonate, flavored with orange.

Phthisopyrin.

Tablets have been put on the market under this name. They are stated to consist of 1½ grains of aspirin, 1½ to 3 grains of camphoric acid, and 1/120 grain of arsenous acid. They are recommended for tuberculosis, hence the name.

Physol.

This is the name given by Wilbert to a preparation used as a physiological solvent on wounds:

Pepsin 100

Menthol 1

Eucalyptol 1

Oil of wintergreen..... 1

Alcohol 20

Diluted hydrochloric acid..... 40

Glycerin 100

Distilled water, to make..... 2000

Physostigmine.

See Eserine.

Phytoline. (209)

This is stated to contain the active principle of the berries of *Phytolacca*

decandra. The berries should have been touched by the early frost, and be extracted with diluted alcohol. The product contains 23½% of alcohol.

Picratol. (Silver Picrate or Trinitrophenolate.) (221)

This is a yellow powder stated to contain 30% of silver, and soluble in 50 parts of water and 60 of alcohol, also soluble in glycerin. It is used like the other organic silver compounds for the treatment of gonorrhea and allied diseases, in ½ to 2% solutions. It is also made up in vaginal suppositories containing 1 or 2 grains each and urethral suppositories containing ½ to 1 grain each.

Picric Acid. (Trinitrophenol.)

This is prepared by acting upon carbolic acid with nitric acid. It is in yellow crystals which are odorless, very bitter in taste, sparingly soluble in water, more soluble in alcohol. It is not used internally, but has been highly recommended externally in aqueous solution as an application for burns. It is incompatible with alkaloids and must not be combined with morphine sulfate, cocaine hydrochlorid, etc.

Picrol.

This is chemically potassium diiodoresorcinmonosulfonate, and is analogous to sozoiodol. It is a white, odorless powder, soluble in water, alcohol, ether and glycerin. It contains 53% of iodine, and is recommended as a non-toxic substitute for iodoform.

Pierce's Golden Medical Discovery.

This is stated by the manufacturers to contain golden seal root, stillingia root, stone root, wild cherry bark, bloodroot, mandrake root, glycerin, water, and borate of soda (about 1 grain to the dose).

Pierlot's Liquid Valerianate of Ammonia.

Extract of valerian..... 2.0

Valerianic acid 3.0

Distilled water 95.0

Ammonium carbonate 1.0

or q. s. —H.

Pierre's Eau Dentifrice.

Make a tincture of 15 g. star anise and 200 of alcohol, add 50 drops each of the oils of star anise and peppermint and color with aniline red.—H.

Pil. Aphro. (Aphrodisiac Pills.) (117)

This is stated to be a combination of damiana, phosphorus and nux vomica.

Pil. Hypo-Quinidol. (78)

This is described as a soluble combination of quinine and "oxidizable phosphorus."

Pil. Orientalis.

This is stated to contain

Ambrosia orientalis	gr. 2
Extract saw palmetto.....	gr. 1/4
Zinc phosphid	gr. 1/30
Strychnos ignatia	gr. 1/40
Strychnine nitrate	gr. 1/450

With capsicum and aromatic powder.

Pil. Palmetol. (117)

Each pill is stated to represent 30 grains of saw palmetto berries.

Pine and Somnos Cordial. (141)

Each teaspoonful is stated to contain the equivalent of 1 dram of white pine comp. with eucalyptol honey, 15 minims of somnos, and 1 grain of the combined glycerophosphates of lime, sodium and potassium. It is sedative and expectorant.

Pineoline. (209)

This remedy for skin diseases is stated to be prepared from the ethered extract of the needles of the pine (*pinus pumilio*) incorporated with lanoline and white petrolatum.

Pineoline. (217)

This is described as an "antiseptic menthol oil solution containing menthol, eucalyptol, oleum dacydium cupressium, camphor, cinnamon, and refined liquid petroleum."

Pinus Alba Compound. (94)

Each fluidram is stated to represent 4 grains each of white pine and wild cherry barks, 3 grains each of squill and senega, 2 grains of ipecac, 1 grain, of blood root, 24 minims of paregoric, 1/4

minim each of chloroform and oil of wintergreen and syrup, q. s.

Piperazine. (Diethylenediamine—Piperaziline.)

This is a synthetically prepared compound. It is in colorless, lustrous crystals which melt at 44° C. It is very soluble in water, less soluble in alcohol. It forms very soluble salts with acids; with uric acid it forms a salt soluble in 50 parts of water. It is incompatible with acetanilid, phenacetin, alkaloidal salts, nitrites, metallic salts in general, and picric and tannic acids. It should not be exposed to moisture. It also attracts carbon dioxid from the air.

It has been recommended for the prevention of renal and visical calculi and for the relief of irritation of the bladder due to excess of uric acid in the urine and in cases of chronic gout, rheumatism, renal colic, etc. The dose is 5 to 10 grains; daily dose, 15 to 30 grains.

Piperazine Water.

This is carbonated water containing piperazine and phenocoll.

Piperidin-Guaiacolate.

See Guaiaperol.

Piperazine Monomethylarsinate.

This is made by dissolving 1 molecular weight of piperazine in cold 90% alcohol and adding to this a solution of 2 molecular weights of monomethylarsinic acid in 90% alcohol.

Piscin.

This is a cod liver oil substitute used by homeopathic physicians in Germany.

Pistoia Gout Powder.

There is a powder made in a convent near Pistoria, Italy, and it is used very extensively as a protective against gout. The following is said by Chastaing to be its composition:

Bryonia root	g. 18
Gentian	g. 18
Chamomile	g. 10
Colchicum root	g. 20
Betony	g. 50

This is made into 365 powders, one of which is taken each day of the year in a full glass of cold or hot water.

—Medical Record.

Pittylene.

This is described as a condensation product of pine tar and formaldehyde which forms a brown powder of a tarry odor. It is used in the treatment of chronic eczema.

Pixine.

This is stated to contain ichthyol, tar, turpentine and burgundy pitch, with wool fat.

Plant's Asthma Cigarettes.

These are said to consist of

Stramonium leavesav.oz. 2
Green tea leavesav.oz. 2
Lobelia leavesav.oz. 1 $\frac{3}{4}$

Mix, moisten with a saturated aqueous solution of potassium nitrate, and dry.—Ph. Post.

Plasmon.

This is a nutritive preparation made from casein. It is a yellowish, granular, sweetish powder, soluble in hot water. It is given in quantities of one or more teaspoonfuls several times daily.

Plaster Mulls.

These were devised by Unna and consist of plaster mass spread upon gutta percha tissue backed by mull. They are made in many medications, such as boric, carbolic, salicylic and pyrogalllic acids, mercury, zinc oxid, ichthyol, resorcin, menthol, chrysarobin, etc.

Plasticum. (181)

This is Cataplasma Kaolini, U. S. P.

Pneumin. (Methylene-Creosote.)

This is a yellowish, odorless and tasteless powder, given in doses of 8 to 15 grains several times daily. It is used for the same purposes as creosote.

Pleis' Fit Powders.

Potassium bromidgr. 15
Gentian, powdergr. 5
Make 1 powder.—Drug Mill.

Poehl's Physiologic Salt.

This is a white powder, readily soluble in water. It contains all the osmotically active constituents of blood serum and in the same proportions as they are contained in the latter. It is marketed in 1 g. tablets. It is used in 1 $\frac{1}{2}$ % solution as a transfusion fluid.

Pollantin. (Dunbar's Hay-Fever Serum.) (Schimmel.)

This is an antitoxic serum obtained from horses treated with pollen toxin derived from ragweed. Horses are injected with gradually increased doses of pollen toxin (derived from ragweed) which results in the formation of an antitoxin after 2 or 3 months of treatment. The horses are then bled and the strength of the serum is estimated by determining the proportion which will prevent the action of a solution of pollen toxin. The serum is preserved by the addition of $\frac{1}{4}$ % of phenol. It is a clear, slightly yellowish liquid which does not keep well when exposed to the air. When it becomes cloudy or develops a bad odor, it should not be used. It is also put up in dry form. It is intended exclusively for use against hay fever, autumnal catarrh, rose fever, and June cold, and may be used as a prophylactic. One drop should be instilled into the outer angle of each eye and one or two drops into one nostril, the other being kept closed, in the morning before arising. The liquid is more frequently used for the eyes, the powder form for the nose.

Polyform.

See Edison's Polyform.

Polyformin.

The insoluble kind is a combination of formin and resorcin. It is a yellowish brown powder, used externally as a substitute for iodoform. The soluble kind is a combination of two molecules of resorcin with one of hexamethylene-tetramine.

Ponca Compound.

Each tablet is said to contain 3 grains of extract of "ponca," 1 grain of extract of mitchella, $\frac{1}{4}$ grain of caulophyllin, $\frac{1}{8}$ grain of helonin, and $\frac{1}{8}$ grain of viburnin.

Pond's Extract.

This is described by the makers as a very pure and concentrated distillate of hamamelis.

Pope's Cure for Neuralgia.

Potassium iodid	gr. 240
Extract of conium.....	gr. 60
Comp. tincture cinchona...	fl.oz. 2
Syrup sarsaparilla	fl.oz. 4
—Nat. Dr.	

Pope's Sodium Salicylate Comp.

Each tablespoonful is stated to contain

Sodium sulfate	gr. 122 $\frac{2}{3}$
Sodium phosphate	gr. 31
Sodium salicylate	gr. 10
Strychnine sulfate	gr. 1/120

Popium.

This is described by the manufacturers as "the anodyne or pain-relieving principle of opium, the narcotic and convulsive elements being eliminated, each fluidram being equal in anodyne power to $\frac{1}{8}$ grain of morphia."

Potassium Sozoidol.

This is in colorless crystals soluble in 50 parts of water and in glycerin. It is a non-irritant antiseptic which may be applied to wounds, burns, skin diseases, etc., generally diluted with 10 to 20 parts of talcum or milk sugar. Aqueous solutions darken on exposure to light.

Potassium-Tonol.

This is glycerophosphate of potassium.

Potsdam Balsam.

Oleobalsamic mixture	fl.oz. 17
Comp. spirit angelica.....	fl.oz. 2
Tincture of capsicum.....	fl.dr. 3
Spirit of ammonia.....	fl.dr. 5
—D.	

Powell's Aniseed Balsam.

This has a composition similar to paregoric. It has but little camphor, a small amount of rhubarb, and some extract of licorice.—N. I.

Praevalidin. (Percutilan.)

This is a camphor ointment containing 10% of camphor combined with peru balsam and eucalyptus and rosemary oils. It is used by inunction in phthisis, chronic bronchitis, etc.

Prescription 49.

See "Boss, The."

Price's (Mrs.) Canning Compound.

Investigation of a sample by the North Dakota Agricultural Experiment Station showed it to be boric acid.

Prima Purificans.

This is stated to contain cascara amarga, burdock seed, poke root, prickly ash, wahoo, and sodium orthophosphate.

Probilin Pills. (178)

These are stated by the manufacturers to contain salicylic acid, acid sodium oleate, phenolphthalein, and menthol. They are recommended as a cholagogue, particularly in gall-stone disease.

Proferrin. (Iron Nucleo-Proteid.) (141)

This is a reddish brown powder insoluble in water and acid solutions, soluble in alkalis with the production of a yellowish-red solution. It contains 10% of iron and 1% of phosphorus. It is absorbed from the duodenum, being unaffected by the gastric juice. It is recommended for all kinds of anemias in poorly nourished people. The dose is 5 grains 3 times daily. It is also put up in tablets of different sizes.

Proferrin Comp. Tablets.

These are stated to contain

Proferrin	gr. 3
Ext. cascara sagrada.....	gr. 1/4
Extract of gentian.....	gr. 1/4
Strontium arsenite	gr. 1/60
Strychnine phosphate	gr. 1/100

Proponal.

This is described as an improved veronal, being dipropylbarbituric acid. It is in colorless crystals which are soluble in 70 parts of boiling water and 1640 parts of cold water. It is given in doses of 2 $\frac{1}{2}$ to 5 grains as a hypnotic.

Propylamine.

This is in clear crystals of an alkaline reaction, and having a strong odor resembling ammonia. It is used as a sedative and antispasmodic in doses of 3 to 10 grains.

Prostaden.

This is a saccharated extract from the prostate gland of steer, one part repre-

senting two of fresh gland. It is used in gland hypertrophy, etc. Dose: 10 to 40 grains per day.

Protalbin-Silver.

This is an albumin compound of silver. It is a grayish-white powder, soluble in about 10 parts of water and in glycerin. It is not precipitated by chlorids or albuminous compounds. It is recommended as an injection in gonorrhea in $\frac{1}{4}$ to $1\frac{1}{2}\%$ solutions.

Protan. (Tannin Nucleo-Proteid.) (141)

This is a chemical compound containing about 50% of tannin and is formed by the action of tannic acid on casein. It is a light brown, tasteless and odorless powder, insoluble in water, acid solutions or the gastric juice. When injected it passes through the stomach undissolved, but becomes active when it reaches the alkaline pancreatic juice. It is highly recommended as an intestinal astringent which may be taken in almost any dose. It is recommended for diarrheas of all kinds, typhoid fever, etc. The adult dose is 15 to 30 grains every hour or two; for children the dose is 5 to 10 grains every hour. It is also put up in tablet form plain and in various combinations (with bismuth, opium, salol, etc.).

Protan Comp. Tablets.

Each tablet is stated to contain

Protan	gr. 2
Bismuth subnitrate	gr. $\frac{1}{4}$
Zinc sulfocarbolic	gr. $\frac{1}{8}$
Pepsin	gr. $\frac{1}{8}$
Pancreatin	gr. $\frac{1}{8}$
Ginger	gr. $\frac{1}{16}$
Opium	gr. $\frac{1}{20}$
Guaiacol	gr. $\frac{1}{20}$
Calomel	gr. $\frac{1}{40}$
Oil of anise, q. s.	

Protargol. (Protein-Silver.)

This is a compound of albumin and silver, containing 8.3% of the latter. It is an impalpable, yellowish-brown powder, soluble in twice its weight of cold water, producing a solution which is not affected by the ordinary precipitants of

silver, salts, such as albumen, alkalies, sulfides, chlorids, bromids, iodids, nor by heat. It is precipitated by cocaine hydrochlorid but this is prevented by addition of boric acid. It is decomposed by light. It is a non-irritant bactericide and antiseptic and is used most largely as an injection in gonorrhea. $\frac{1}{4}$ to 1% solutions are recommended for acute gonorrhea, 5 to 10% instillations in chronic gonorrhea, urethritis and cystitis, and 1:200 to 1:1000 solutions as irrigations. It may also be used in the form of tampons and bougies. It is also used in the treatment of diseases of the mucous membranes of the eye, ear, nose and throat. It is sometimes given internally in doses of 1 to 3 grains.

Potassium-Tonol.

This is glycerophosphate of potassium.

Protogen.

This is a combination of serum or egg albumin with formaldehyde. Its aqueous solution is not coagulated by heat. It is recommended as an addition to milk for feeding children.

Protonuclein. (167)

This is stated to be prepared from an equal number of pineal glands and pituitary bodies of the brain, salivary glands, thyroid gland, pancreases, inner linings of stomachs, Brunner's glands and Lieberkuehn's follicles, and thymus glands, the whole preserved by an investment of benzoin and milk-sugar. The pineal glands and pituitary bodies are taken from the brain of the ox, the others from the pig. It is prepared in four forms: Powder, special powder, tablets, and suppositories. The tablets and powder are combined with milk-sugar. The special powder is for local and hypodermic use and consists of the pure nucleoalbumins unmixed with milk-sugar.

Protosal.

This is a salicylic ester of a glycerin-formaldehyde. It is a thickish liquid, soluble in ether, alcohol, chloroform and

oils but insoluble in water and glycerin. It is used externally for rheumatism in mixtures containing 10 parts of protosal, 1 of alcohol, and 9 of olive oil, by weight.

Protozone.

This is stated to contain thymol, sodium benzoate, sodium salicylate, citrinol, glycerin and alcohol.

Protulin. (Phosphorus-Albumin.) (98)

This is an albumen preparation containing phosphorus, which is intended as a substitute for lecithin. It is a white, odorless, tasteless powder, containing 2.6% of phosphorus. It is insoluble in water but soluble in alkaline liquids. It is stated to be an assimilable, non-toxic form of phosphorus, useful as a nerve tonic and reconstructive in neurasthenia, rickets, scrofula, etc.

The dose is 10 to 20 grains in soup, broth, etc., three times daily. It must not be boiled with food. It is also put up in combinations with arsenic, iron and bromin.

Prunicodeine. (117)

Each fluidram is stated to represent

Wild cherry.....	gr. 3
White pine.....	gr. 2
Blood root.....	gr. $\frac{1}{2}$
Terpin hydrate.....	gr. $\frac{1}{3}$
Acetanilid	gr. $\frac{1}{3}$
Codeine sulfate.....	gr. $\frac{1}{8}$

Pruni-Heroin.

This is described as a compound syrup of heroin and terpin hydrate.

Pruni-Pepto. (214)

Each fluidram is stated to represent

Pepsin, pure.....	gr. 2
Pancreatin	gr. 1
Nux vomica	fr $\frac{1}{4}$
Lig. rennet.....	drops 10

Combined with "celery fruit aromatics."

Prunier's Hyperphosphine.

See Hyperphosphine.

Pseudohyoscyamine.

This is an alkaloid contained with hyoscyne and hyoscyamine in duboisia leaves. It is in needle-shaped crystals

of a yellowish color, which are sparingly soluble in water and ether, but freely soluble in alcohol and chloroform. It has medical properties like hyoscyne and hyoscyamine, but is less toxic. The dose is $\frac{1}{32}$ to $\frac{1}{20}$ grain, in subcutaneous injection.

Pulsa-Flora.

This is stated to contain in each fluid-ounce

Passiflora	gr. 30
Pulsatilla	gr. 15
Gelsemium	gr. 15
Strontium bromid.....	gr. 20
Aromatics, q. s.	

Pulvola. (165)

This is stated to be sterate of calcium and magnesium. It is recommended as an infant powder and as a dressing for wounds.

Punicine Tannate.

See Pelletierine Tannate.

Purcell, Ladd & Co.'s Emulsion of Cod Liver Oil.

The oil is stated to be emulsified with acacia; also each fluidounce is stated to contain 10 grains of the hypophosphites of lime and soda, together with a small proportion of glycerin and alcohol.

Purgative Granules.

The following is given as the composition of each granule:

Aloin	gr. $\frac{1}{8}$
Podophyllin	gr. $\frac{1}{16}$
Leptandrin	gr. $\frac{1}{16}$
Judlandin	gr. $\frac{1}{16}$
Jalapin	gr. $\frac{1}{32}$
Oil of mustard.....	drop $\frac{1}{200}$
Oil of peppermint, q. s.	

Purgatin. (Purgatol—Anthrapurpurin Diacetate.) (109)

This is the first synthetic purgative, being an oxyanthraquinone. It is a voluminous orange-colored, crystalline powder, tasteless and insoluble in water and dilute acids, but slowly soluble in weak alkaline solutions, splitting off anthrapurpurin. It is incompatible with alkalis and their carbonate. It is a laxative and is said to be free from by-ef-

fects. Being insoluble in dilute acids, it passes unchanged into the intestinal tract, where it is slowly split and produces painless peristalsis. The dose is 5 to 20 grains. It is also put up in 5-grain tablets.

Purgatol.

See Purgatin.

Purgo.

This is a name given to phenolphthalein put up in tablet form.

Purgerine. (Syrup Senna Aromat. Co.) (223)

This is stated to be made by extracting the cathartic principles from senna and jalap without extracting the bitter and griping properties.

Puroform.

This is stated to be composed of a zinc-formaldehyde compound, thymol, menthol and eucalyptol. It is recommended as an antiseptic and disinfectant.

Pyohemol.

This is made by dissolving camphoroform in carbolic acid. This is clear liquid, becoming discolored on exposure to light, of a disagreeable odor, and is soluble in alcohol, ether and oils. It is said to be antiseptic and hemostatic, and is also used as an inhalant in phthisis. Externally it is used in 10 to 20% mixture in ointments or with glycerin.

Pyoktanin.

This is the name given to two aniline dyes, one violet, the other yellow, which have been used as antiseptics.

Pyoluene.

This is a name for oxymethylallylsulfocarbimide which is recommended as an antiseptic equal to mercuric chlorid. It is said to be very soluble in water, alcohol, ether and glycerin, to be non-toxic, non-caustic, and to have an agreeable taste.

Pyramidon. (Dimethylamidoantipyrin.)

This is prepared by the reduction of nitroso-antipyrin to amido-antipyrin and treating this with methyl chlorid or iodid. It forms small, colorless crystals which are almost tasteless, soluble in 11 parts of cold water, 2 of alcohol and also soluble in ether. Its incompatibilities in general are the same as those of antipyrin. Oxidizing agents, also acacia, often produce colored solutions. It acts as an antipyretic and analgesic like antipyrin but is effective in smaller doses. It is claimed to be devoid of harmful influence on the blood, heart, or kidneys, in fact it is said to stimulate the heart's action. It has been recommended as an antipyretic in asthma, phthisis and abdominal typhus and as an anodyne in headaches and neuralgic pains, the dose being 8 to 12 grains.

Pyramidon Camphorate.

There are two forms of this compound, one being a neutral, the other an acid, salt of pyramidon and camphoric acid. Both are white, crystalline powders, the neutral salt being soluble in 15 parts of water or 2 of alcohol, the acid in 20 parts of water or 4 of alcohol. The salts combine the antipyretic action of pyramidon with the antihydrotic action of camphoric acid. In the neutral salt the antipyretic action of the pyramidon predominates in the acid salt, the antihydrotic action of the camphoric acid. They are particularly recommended in the febrile conditions of phthisis, attended by profuse sweating. The dose of the neutral camphorate is 8 to 12 grains, of the acid camphorate, 12 to 15 grains.

Pyramidon Salicylate.

This is a salt of pyramidon and salicylic acid. It is a white crystalline powder, soluble in 16 parts of water or 5 to 6 parts of alcohol. It is antipyretic, analgesic and antiseptic, and is recom-

mended in rheumatic and gouty affections, neuralgia, pleuritis, etc. The dose is 8 to 12 grains.

Pyran.

See Pyrenol.

Pyrantin. (Phenosuccin.)

This is a combination of phenacetin and succinic acid. It is in colorless needles, requiring 1400 parts of water for solution. The soluble form is a sodium compound. Both forms are used as antipyretics in doses of 5 to 15 grains.

Pyrenol. (Pyran.) (178)

This is stated to be a chemical compound of salicylic acid, thymol and benzoic acid. It is a white, crystalline, slightly hygroscopic powder, having an aromatic odor and a sweetish taste. It is recommended as an antispasmodic in asthma, bronchitis and pertussis, an analgesic in rheumatism, neuralgia, sciatica, etc., and an expectorant in pneumonia. The dose is 8 to 15 grains three times a day.

Pyridine.

This is a liquid derived from coal tar oil and possessing strong basic properties. It is contained in tobacco smoke. It is a colorless liquid when pure and fresh, soluble in water, alcohol, oils, etc., and of a very disagreeable, suffocating odor, and has therefore been used for denaturing alcohol. It is used by inhalation in asthma, 20 to 60 drops being allowed to evaporate from a saucer near the patient.

Pyridine Tannate.

This is prepared by pouring a solution of pyridine into a solution of tannin in excess. The product is a powder which is decomposed on exposure to light. It is used as a uric acid solvent and an intestinal astringent.

Pyrodin.

This is the same as Hydracetin, which see.

Pyrodol.

This is the formula as given by the manufacturers:

Echinacea angustifolia.....oz.	2½
Creosotin (a distillation of wood tar).....m.	50
Sodium pyro-phenolsulphonate	dr. 2
Arbor vita.....dr.	10
Phytolacca decandra.....oz.	½
Potassium glyco muriate....oz.	5
Aromatics	m. 20
Succus vitis vinifera, q. s.....oz.	20

It is recommended for catarrh.

Pyroferrine. (117)

This is stated to contain in each fluidram 2½ grains of iron pyrophosphate, 1/100 grain of strychnine, and 5 grains of diluted phosphoric acid. It also contains 12% of alcohol.

Pyrofistine.

This is stated to contain silica, magnesia, iron carbonate, gaultheria, peppermint, mixed with an antiseptic oil to form a paste.

Pyroglycerin.

This is a synonym for nitroglycerin.

Pyrogallol-Bismuth.

See Helcosol.

Pyrosal. (Aceto-Salicylate of Antipyrin.)

This is in white powder or colorless crystals, and almost insoluble in water. It is stated to contain 50% of antipyrin, 36% of salicylic acid, and 14% of acetic acid and is decomposed into these constituents in the intestines. The dose is 5 to 15 grains three times a day.

Pyrozone. (121)

This is a solution of hydrogen peroxid. It is made of two strengths, 3% aqueous solution, and 25% ethereal solutions.

Quartonol Tablets. (178)

These are stated to contain 2¼ grains of each, calcium and sodium glycerophosphates, ½ grain of quinine glycerophosphate and 1/100 grain strychnine glycerophosphate.

Quesneville's Cream of Bismuth.

According to Hager this is a mixture of bismuth subnitrate.

Quickine.

Carbolic acid.....	part	1
Mercuric chlorid.....	part	1/50
Alcohol and water.....	parts	1000

—Ph. Ztg.

Quina-Laroche.

This is described by the makers as a "complete extract of yellow, red and gray cinchona, prepared in the form of a vinous elixir."

Quinalgen. (Analgen—Benzalgen.)

This is a derivative of chinoline, and occurs as a white, tasteless, odorless, crystalline powder, insoluble in water, sparingly soluble in cold alcohol, but readily soluble in hot alcohol. It is used against malarial fevers as a substitute for quinine, also as an antineuralgic and analgesic for sciatica, migraine, rheumatism, etc., in doses of 5 to 15 grains two or three times daily.

Quinilid Tablets. (117)

These are stated to consist of 2½ grains each of acetanilid and quinine sulfate.

Quinaphthol. (Chinaphthol—Quinine Betanaphthol-Sulfonate.)

This is a compound of quinine and naphthol. It is a yellow crystalline, bitter powder, insoluble in cold water, slightly soluble in hot water and in alcohol. It is used as an intestinal antiseptic and antipyretic in doses of 8 to 15 grains.

Quincoca. (138)

This is stated to be a combination of quinine, coca leaves, gentian, wild cherry, orange peel and aromatics exhausted with port wine.

Quinic Acid.

This is an acid naturally present in cinchona bark. It is in white crystals, soluble in water and alcohol and of an acid taste. It is used in uric-acid diathesis, generally in the form of salts such as lithium quinate (urosin), piperazine

quinate (sidonal), urotropin quinate (chinotropin), urea quinate (urol), etc.

Quinidine.

This is one of the alkaloids of cinchona. It is in colorless, lustrous prisms soluble in 20 parts of alcohol, almost insoluble in water. It is almost tasteless and hence is preferred instead of quinine, especially for children. It is used as an antiperiodic and antipyretic in doses of 3 to 30 grains, suspended in syrup.

Quinine Formate.

This is used in two forms, neutral and basic, the latter soluble in 5 parts of cold water. It is recommended for hypodermic use.

Quinine Hydrochlorsulfate.

This is produced by dissolving together, in molecular proportions, quinine hydrochlorid and quinine bisulfate, evaporating and crystallizing.

It is in colorless crystals soluble in 1 part of water, and because of its ready solubility, is especially useful for hypodermic injection.

Quinine Lygosinate.

This is prepared by the reaction of quinine hydrochlorid with sodium lygosinate. It is a fine, amorphous, yellow powder, of a bitter taste and a faintly aromatic odor. It is slightly soluble in water, soluble in 6 parts of alcohol, also soluble in oil and chloroform. It is decomposed by acids and alkalies. It contains about 71% of quinine. It is a non-toxic and non-irritant antiseptic, possessing very decided bactericidal odorizing and styptic properties. It may be employed as a dusting powder, in bandages, gauzes, suppositories, in the form of court plaster and in glycerin suspensions.

Quinine Tonol.

This is glycerophosphate of quinine. It is a white powder, sparingly soluble in water, more soluble in alcohol, and contains 68% of quinine. It is used

chiefly in malaria associated with nervous disturbances. The dose is 3 to 10 grains three times a day.

Quinoline. (Chinoline.)

This is a tertiary amine naturally present in coal tar. It is now prepared from aniline. It is a colorless liquid becoming yellow by age, and has a peculiar odor. It is miscible with alcohol and ether and is practically insoluble in water. It is used in water or alcohol as an antiseptic mouth or tooth wash, etc., and for preserving anatomical specimens.

Quinoliniv.

This is described as a "tasteless, soluble powder of sulfate of quinine with olive oil."

Quinopyrin. (Chinopyrin.)

This is a combination of 3 parts of quinine hydrochlorid and 2 of antipyrin. It is a white powder, readily soluble in water, and is recommended for hypodermic use in malaria.

Quinquinia.

This is a similar preparation, according to a communication by Dr. Lee to the Phila. Med. and Surg. Reporter years ago:

Quinine alkaloid.....	15%
Quinidine alkaloid.....	15%
Cinchonidine alkaloid.....	15%
Cinchonine alkaloid.....	25%
Chinoidine	30%

Quionin.

This is said to consist of 90% of "side bark" alkaloids and a small percentage of quinine.

R. & H. Three Chlorides.

See Henry's Three Chlorides.

Rachitol.

This is the suprarenal gland in tablet form.

Radal.

This is said to be a prophylactic against gonorrhea consisting of a 20% solution of protargol.

Radam's Microbe Killer.

This is stated by the manufacturers to be composed of pure water charged with gases generated from the following ingredients:

Flowers of sulfur.
Nitrate of soda.
Black oxide of manganese.
Chlorate of potash.

Radcliffe's Elixir.

Aloes	parts 23
Rhubarb	parts 4
Cassia bark.....	parts 2
Zedoary	parts 2
Cochineal	parts 2
Syrup of buckthorn berries	parts 60
Alcohol	parts 150
Water	parts 155
—Dorvault.	

Radium Fluid.

This is said to be made by exposing normal salt solution to the emanations from a tube of radium bromid for 24 hours. The solution is impregnated with the properties of the radium, becoming radioactive.

Ransom's Hive Syrup and Tolu.

This is stated to contain squills, 6%, senega root, 1%, tartar emetic, 1/10%, sugar, 63%, with a sufficient quantity of balsam of tolu and an aqueous solution of dracontium, lobelia and honey.

Raymond's Disinfectant.

According to the patent specifications, this is said to contain zinc acetate, boric acid, aluminum sulfate and acetate, sodium hyposulfite, mercuric iodid, and acetic acid.

Red Clover Compound. (Laxative Cordial.) (17)

Each fluidram is stated to represent 15 grains of red clover, 8 grains of cascara sagrada, and 3 grains each of berberis aquifolium and iris versicolor.

Regnault's Pate Pectorale.

According to Hager, this is prepared from an infusion of 50 g. of pectoral species, 300 g. of gum arabic, 350 to 400 g. of sugar, and 3 g. of balsam of tolu.

Regulin. (96)

This is stated to be a mixture of agar-agar in a dry form with extract of cascara sagrada, representing 20% of an aqueous fluid extract of cascara sagrada. It is in the form of odorless and tasteless brown scales which slowly absorb water to form a jelly. It is recommended for the treatment of habitual constipation in doses of a teaspoonful to a tablespoonful once daily in stewed apples, mashed potatoes, or similar food.

Renaden.

This is a trituration of an extract of pigs' kidneys, 1 part representing 2 parts of the fresh organ. It is used in uremia and nephritis in doses of 1 to 2 drams daily. It is also put up in 4-grain tablets.

Renaglandin.

This is described as a "concentrated solution of suprarenal gland." It is recommended as a hemostatic.

Renastypin.

This is a solution of the hemostatic principle of the suprarenal bodies.

Renatone. (211)

Each dessertspoonful is stated to contain

Hexa-cystine	gr. 2
Lithium "benzo-citrate".....	gr. 1
Buchu	gr. 4
Digitalis	gr. ½
Triticum	gr. 2
Potass. nitrate	gr. 1
Oil juniper berries.....	gr. ½

In an alkaline medium free from sugar. It is also stated to contain 12% of alcohol.

Renoform.

This is a preparation of the suprarenal capsule intended for use in coryza.

Renol.

This is described as a combination of pure "sodium lithiate," diuretin, damiana, and digitalin, with alkalies and demulcents.

Resaldol.

This is a condensation product of saloform and resorcin. It is a yellowish

brown powder, odorless, of an astringent taste, and insoluble in water and dilute acids, soluble in alkalies. It is used as an intestinal antiseptic and astringent in doses of 5 to 15 grains 3 to 5 times daily.

Resinol.

This is an ointment described as a "combination of the active principle of *Juniperus oxycedrus*, and a synthetical derivative of the coal tar series and asphaltum with lanolin and petrolatum."

Resorbin.

An ointment vehicle prepared by emulsifying sweet almond oil and water with yellow wax, gelatin and soap.—Coblentz.

Resorcinol.

This is the correct appellation for resorcin. The name is also applied to a compound obtained by melting together iodoform and resorcin. It is a brownish powder of a slight iodine odor. It is used as an antiseptic application in powder form mixed with 1 to 4 parts of starch or in a 5 to 15% ointment.

Respirazone. (194)

This is stated to be composed of iodide and bromide of potassium, ipecac, lobelia, and motherwort. It is used for hay fever and asthma.

Retinol. (Rosinol—Codal.)

This is obtained by destructive distillation of resin. It is an oily, viscous liquid of specific gravity 0.900. An internal and external antiseptic in venereal and cutaneous affections; also used as a solvent for phosphorus, salol, iodol, aristol, camphor, creosote, etc., especially for remedies applied externally for skin diseases. It is applied pure, or in ointment or liniment.

Dose: 8 drops 4 to 6 times daily, in capsules.

Rhei-Drastis. (198)

This preparation is similar to "neutralizing cordial."

Rheumacilate.

This is stated to be chemically pure salicylate of methyl.

Rheumagon. (4)

This is stated by the manufacturers to be composed of iodid and phosphate of sodium.

Rheumatin.

This is Saloquinine Salicylate, which see. The name is also applied to a preparation stated to contain in each fluidram 2 grains of sodium iodid and 26 grains of sodium phosphate.

Rheumon.

This is the name given to a paper bearing a layer of aromatic gums and balsams, and which is intended for the relief of rheumatic pains. The medicating ingredients consist of camphor, benzin (not benzoin), Mecca balsam, fir balsam and fluid extract of arnica.

Rhinol. (138)

This is stated to be a combination of aristol guaiacol, menthol, eucalyptol, and oil of saw palmetto, with a pure bland oil.

Rhomnal.

This is a nucleinic acid of French manufacture, obtained from the thymus gland of a calf. Rhomnoline is the calcium salt, and Rhomnogyre is the mercury salt of this acid. They are credited with tonic and nervine properties.

Ricin.

This is described by the manufacturers as a palatable castor oil.

Ricinol Grape. (84)

Each capsule is stated to contain 40 minims of pure castor oil.

Ricord's Capsules of Copaiba and Tar.

Hager gives this formula:

Copaiba balsam.....g.	55
Magnesia, calcined.....g.	5
Pine tar.....g.	5

Divide into 100 capsules.

Ricqle's Alcool de Menthe.

According to Hager this is a solution of 9 g. of oil of peppermint in 200 g. of alcohol.

Ripans Tabules.

The formula is given as follows:

"Soda"	gr. 5
Rhubarb	gr. 2
Aloes	gr. 1/2
Ipecac	gr. 1/4
"Nux"	gr. 1/8
Peppermint	gr. 1/8

Ringoline.

This is stated to be a paste of equal parts of cod liver oil and glycerin with 3% of zinc oxid and Peru balsam. It is used for skin eruptions of infants, also as a vehicle for other substances such as tar, salicylic acid, etc.

Robach's Bitters.

According to Hager the principal ingredients are gentian and angelica with smaller amounts of aromatic substances. It also contains traces of acetic ether, 36% of alcohol and 21% of sugar.

Robbert's Camphor-Tar Ointment.

The following is said to be the formula (N. I.):

Tar	av.oz. 1
Camphor	av.oz. 1
Lard	av.oz. 8

Robin's Powder of Glycerophosphates.

Iron glycerophosphate.....g.	0.5
Calcium glycerophosphate....g.	0.3
Magnesium glycerophosphate.g.	0.1
Ignatia	g. 0.2
Egg albumin, dry.....g.	0.1

This is for one powder.—Bouchardat's Formulary.

Robin's Pill Cascara Comp.

These are stated to contain cascara, hyoscyamin, podophyllin, colocynth, with aromatics, q. s., to make 1-grain pill.

Pill Cascara Comp. strong is four times the strength of the preceding.

Robinson's Elixir Paraldehyde.

This is stated to contain 45 grains (10%) of paraldehyde to the fluidounce, dissolved in an aromatic menstruum.

Robinson's Hypophosphites.

Each fluidounce is stated to contain

Sodium hypophosphite.....gr.	2
Calcium hypophosphite.....gr.	1 1/2
Iron hypophosphite.....gr.	1 1/2

Manganese hypophosphite....gr.	1½
Quinine hypophosphite.....gr.	¾
Strychnine hypophosphite....gr.	1/16

Robinson's Phosphoric Elixir.

Each fluidounce is stated to represent

Sodium phosphate.....gr.	12
Potassium phosphate.....gr.	4
Calcium phosphate.....gr.	4
Iron phosphate.....gr.	2
Free monohydrated phosphoric acid	gr. 16

Roboline. (Roboline Cordial.) (167)

Each wineglassful or two tablespoonfuls is stated to contain quinine, ¼ grain, strychnine, 1/400 grain, dilute phosphoric acid, 8 minims, extract of wild cherry bark, extract of Oolong tea, 8 grains, combined with carminative aromatics.

Roborat.

This is an albuminoid dietetic made from grain. It is a fine white odorless and tasteless powder. It is said to contain a large amount of lecithin and glycerophosphoric acid. It is also said to be easily digested and absorbed even if given by enema.

Roches' Embrocation.

According to Mueller's analysis (in H.) this is composed of 5 g. of asafetida digested with 120 g. of olive oil for several hours, the oil is decanted and mixed with 4 g. of caraway and turpentine oils and a few drops of oil of bergamot. According to Hager's investigations it is composed of about 50 g. of olive oil, 3 g. of oil of clove, 2 g. of oil of caraway, and 5 g. of tincture of opium.

Rodagen.

This is a preparation obtained from the milk of goats which have previously been deprived of their thyroid glands. The dried milk is triturated with 50% of milk sugar. The product occurs as a white, palatable powder. It is used in the treatment of exophthalmic goiter in doses of 5 to 10 g. daily.

Roge's Purgative Powder.

According to Dorvault, this is composed of 8 parts of calcined magnesia, 4 of magnesium carbonate, 26 of citric acid, 50 of sugar, and some oil of lemon.

Ronozol Salts.

These are compounds of mercury, potassium, sodium and zinc with diiodo-paraphenolsulfonic acid, which are recommended as antiseptics.

Roseter's Hair Regenerator.

According to Hager, this is composed of 345 g. of rose water, 50 g. of glycerin, 2 g. of lac sulfur and 1½ g. of lead acetate. According to Ch. and Dr. analysis it is composed of 44.8 grains of sulfur, 21.87 grains of lead acetate and 10 ounces of glycerin and water.

Rotterine.

Zinc chlorid.....gr.	45
Zinc sulphocarbolate.....gr.	45
Salicylic acid.....gr.	6
Boric acid.....gr.	27
Citric acid.....gr.	1
Thymol	gr. 1
Sodium chlorid.....gr.	2½
Distilled water.....fl.oz.	16

The tablets contain one-half the quantities of the solids mentioned above.

This mixture was recommended by Dr. Rotter as an ideal antiseptic.

Rubidium Bromid.

This is in colorless crystals or white powder soluble in water. It is said not to cause gastric disturbance. It is used like potassium bromid in doses of 5 to 15 grains.

Rubidium Iodid.

This is colorless, cubical crystals of a bitter, saline taste and about as soluble in water as potassium iodid. It is used in place of the latter and is preferred because it is said not to cause gastric disturbance. The dose is 5 to 10 grains.

Rufus's Pills.

These are the Pills of Aloes and Myrrh of the pharmacopeia.

Russell Emulsion, The.

This is stated to be a modified pancreatic emulsion and to contain beef fat, and cocoanut, peanut, olive and clove oils.

Sabalol. (138)

This is described as a bland, oily base, which is a suitable vehicle for many medicaments.

Sabalol Balsam.

This is described as a "prepared combination of the active principles of the saw palmetto."

Sabalol Spray.

This is described as a combination of the active principles of saw palmetto with eucalyptol, $2\frac{1}{2}$ minims (5 drops), and menthol, 4 grains, to the ounce.

Sabalol Tablets.

This is described as a combination of the active principles of saw palmetto with $\frac{1}{4}$ grain of powdered cubeb and 1/200 grain of nitrate of sanguinaria to each tablet.

Saccharin. (Anhydroorthosulfamidobenzoic Acid—Benzoylsulfonic Imide.)

This is a white powder, about 300 times sweeter than sugar. It is only sparingly soluble in water, its solubility being increased by the alkali carbonates. The so-called "soluble saccharin" is a combination of saccharin and sodium bicarbonate.

It is used as a sweetener when sugar is not admissible, as for diabetics.

Sajodin. (Calcium Monoiodobenzenate.)

This is a colorless, odorless and tasteless powder, insoluble in water, alcohol or ether, soluble in chloroform. On exposure to light it becomes yellow superficially without material decomposition. It contains 26% of iodine. It is used for the same purposes as other iodids. It is said to be free from unpleasant and deleterious side effects. The dose is 15 to 45 grains daily.

Sal Aperien's. (154)

This is stated to be composed of sodium sulfate, magnesium sulfate, potassium sulfate, sodium chlorid, free sulfur and "iron crenate."

Sal-Eliminant(Dusal.)

This is given as the "drachm formula."

Lithium carbonate.....	gr. 3
Sodium sulfate.....	gr. 20
Sodium phosphate.....	gr. 10
Sodium chlorid.....	gr. 3
Potassium bicarbonate.....	gr. 5

Sal-Ethyl. (Ethyl Salicylate.) (159)

This is a colorless, transparent, volatile fluid, which is designed to take the place of methyl salicylate or oil of wintergreen. It is supplied in 5-minim globules.

Sal-Codeia. (20)

This is said to be 5-grain tablets containing 5 grains of salacatin and $\frac{1}{4}$ gr. of codeine sulfate.

Sal Hepatica. (29)

This is described as a combination of salts similar to those contained in the bitter waters of Bohemia, fortified by the addition of lithium and sodium phosphates.

Sal Lister.

This is described as a soluble powder stated to contain carbolic and boric acids, boroglyceride, sozoiodol, hydrastine (white alkaloid), sodium biborate (dehydrated crystals), with the crystalline principles of eucalyptus, wintergreen, thyme and mint.

Sal-Lithia Tablets. (154)

These are stated to be composed of	
Ext. cascara sagrada.....	gr. 2
Lithium salicylate.....	gr. 2
Colchicine salicylate.....	gr. 1/500
Pilocarpine salicylate.....	gr. 1/200

Sal Physiologicum Poehl.

See Poehl's Physiologic Salt.

Sal Prunelle.

This is in balls consisting of potassium nitrate with a small amount of the sulfate.

Salacetol. (Salicylacetol.)

This is in fine, shining bitter needles or scales, which are insoluble in cold water, sparingly soluble in cold alcohol, but freely soluble in hot alcohol, in ether, chloroform and oils.

It is an internal antiseptic in infectious diarrhea, gouty rheumatism, etc. Designed for same uses as salol.

Dose: 30 to 45 grains in a fluidram of castor oil, preferably in the morning.

Salactol.

This is stated to be a preparation containing the sodium salts of salicylic and lactic acids. It is to be dissolved in 1% hydrogen peroxid and applied to the throat in diphtheria.

Salalgin. (63)

Each dessertspoonful is stated to contain

Strontium salicylate.....	gr. 6
Strontium lactate.....	gr. 4
Strontium iodid.....	gr. 1
Green tr. gelsemium.....	m. 4
Wine of colchicum.....	m. 10
Hydrastoids, q. s.	

Salamid. (131)

This is described as an amidogen derivative of salicylic acid, and is said to be made by the action of ammonia upon natural oil of wintergreen. It is in white or pinkish white crystals, which are easily soluble in alcohol and ether but sparingly in water. Aqueous solutions are decomposed by alkalies. It is used in the same indications as the salicylates but the ammonia combination is said to prevent cardiac depression.

Salaperient. (105)

This is an effervescent salt, each heaping teaspoonful of 4 grains each of potassium and sodium sulfates and 16 grains of magnesium sulfate.

Salenal.

This is an ointment containing $\frac{1}{3}$ of salene. It is used externally for rheumatism.

Salene.

This is a preparation which is a mixture of methylglycol and ethylglycol

salicylates. It is used as a liniment or embrocation, mixed with equal parts of alcohol or castor oil.

Salibromin.

This is dibromsalicylic methyl ester. It is a white, tasteless powder of a faint odor, insoluble in water and in acids, but soluble in alkalies. It is used as an antipyretic and antirheumatic in doses of 8 grains 4 to 10 times daily.

Saliciform.

This is described as a pinkish-white, crystalline powder, used as an antirheumatic, antipyretic and analgesic.

Salicylamide.

This is obtained by acting upon methyl salicylate with dry ammonia. It is in thin, colorless plates, soluble in alcohol, ether or chloroform, sparingly soluble in water. It is used as a substitute for salicylic acid in doses of 3 to 5 grains every 3 or 4 hours.

Salicylbromanilid.

Same as Antinervin, which see.

Salicylos. (141)

This is an effervescent granular powder, each dessertspoonful of which is stated to contain 10 grains each of strontium and ammonium salicylates with an excess of a non-irritating alkaline salt.

Salifebrin.

This is said to be a mixture of acetanilid and salicylic acid.

Saliformin. (Formin or Urotropin Salicylate.) (130)

This is the salicylate of hexamethylenamine. It is prepared by dissolving equal weights of hexamethylenamine and salicylic acid in water and evaporating the solution to dryness at a temperature below 60° C. It is a white, crystalline powder, having an acidulous and disagreeable taste, readily soluble in water or alcohol. It is decomposed by basic substances (soluble hydroxids, carbonates, etc.) and by strong acids. It is incompatible with salts of iron and other metals which form insoluble compounds with salicylates.

It is recommended as a genito-urinary antiseptic and uric acid solvent in cases of cystitis, lithiasis and bacterial affections of the urinary tract in doses of 5 to 30 grains.

Saligenin. (Ortho-oxybenzylic or Salicylous Alcohol.)

This is in colorless scales, soluble in alcohol, ether or hot water. It is used in the treatment of rheumatism, malaria, etc. Dose: 8 to 15 grains every 2 or 3 hours.

Saliodin. (Densten.)

The formula for this preparation is given in this wise. Each 20 grs. contains approximately:

Salicylic acid (aceto-salicylate)	gr. 15
Iodin (iodate) equivalent to iodide potass.....	gr. 15
Acetic acid (acetate), equiv. to acetate potass.....	gr. 5
Aconite, equiv. to Tr.	
Aconite R.....	drops 4
Bryonia, equiv. to Tr.	
Bryonia	drops 4
Colchicum, equiv. to Vin.	
Colchicum Root.....	drops 15
Capsicum, equiv. to Tr.	
Capsicum	drops 2
Oil gaultheria.....	m 3

Salipyrine. (Antipyrine Salicylate—Salazolon.)

This is a combination of salicylic acid and antipyrine. It is in the form of a white, crystalline powder or as tubular crystals, odorless, soluble in 200 parts of cold water and 40 parts of boiling water, readily soluble in alcohol. It is incompatible with acids, alkalies and tannins. It possesses the properties of both antipyrin and salicylic acids. It is recommended for sciatica, rheumatism, influenza, pleurisy, etc., in doses of 5 to 30 grains about 3 times daily.

Salit.

This is said to consist chiefly of the salicylic ester of borneol. It is an oily liquid, nearly odorless, insoluble in water, slightly soluble in glycerin, readily soluble in alcohol, ether or oils. It is incompatible with alkalies. It is

used externally by inunction in a mixture with equal parts of olive oil for gout, rheumatism, neuralgia, pleurisy, etc. It is said to be absorbed by the skin and be decomposed by the body, salicylic acid being liberated in the tissues.

Salitannol.

This is a condensation product of salicylic and gallic acids. It is a white amorphous powder, insoluble in water, ether or chloroform, sparingly soluble in alcohol, but is easily dissolved by caustic alkalies. It combines the properties of salicylic and tannic acids and is used for wounds and in intestinal catarrh in doses of 15 grains 3 times a day.

Salithymol. (Thymol Salicylate.)

This is a white, crystalline powder of sweetish taste, soluble in alcohol and ether, slightly soluble in water. It is used as an internal antiseptic in the same doses as salol.

Salitonia. (Saline Tonic.) (163)

This is stated to be a composite salt composed of chlorids, bromids, and carbonates of lithia, potassium, strontium, sodium, etc. It is put up in powder and tablet forms.

Salocoll. (Phenocoll Salicylate.)

This is prepared by neutralizing hot aqueous solution, of salicylic acid with phenocoll. It is in fine, white crystalline needles, of a sweetish taste, soluble in 200 parts of cold water, readily soluble in hot water. It combines the properties of phenocoll and salicylic acid and is used for rheumatism, gout, chorea, influenza, etc., in doses of 15 to 30 grains.

Salocreol.

This is the salicylic ester of creosote. It is a brown, oily liquid, almost odorless, insoluble in water readily soluble in alcohol, ether, chloroform and oils. It is used externally for facial erysipelas, acute and chronic inflammation of the lymph glands and chronic arthritis.

Salol. (Phenyl Salicylate.)

This is a white, crystalline, odorless powder, almost insoluble in water, soluble in 10 parts of alcohol, and readily soluble in ether, chloroform, and fluid and volatile oils.

When taken, it passes unabsorbed through the stomach into the intestinal tract, where the alkaline fluids decompose it into its constituent parts, salicylic and carbolic acids. It is, therefore, a valuable intestinal antiseptic in diarrhea, typhoid fever, etc. It is also useful as a coating for pills which are intended to act only on the intestines.

The dose is 15 to 30 grains as an antirheumatic; for other purposes, the dose is 5 to 15 grains.

Salomon's Balm of Gilead.

This is an aphrodisiac remedy formerly patented in England. Hager gives the following as the formula:

Cardamon	g. 30
Cassia bark.....	g. 30
Mecca balsam.....	g. 3
Tincture of cantharides.....	g. 15
Sugar	g. 250
Alcohol	g. 350
Water	g. 150

Salophen. (Acetylparamidophenol Salicylate.)

It is in small, white, crystalline leaflets or powder, odorless and tasteless and containing 51% of salicylic acid. It is almost insoluble in cold water, more soluble in warm water, but freely soluble in watery solutions of the alkalies and in alcohol, ether and benzene. It is incompatible with alkalies which decompose it. The actions of salophen resemble those of phenol. It is not changed in the stomach but is decomposed in the intestines into salicylic acid and acetylparamidophenol which latter, unlike phenol, is not toxic. It acts as an antirheumatic, antipyretic, antiseptic and analgesic, and has been recommended for rheumatism, gout, neuralgia, typhoid fever, and as an intestinal antiseptic, in diarrhea and dysentery. The dose is 5 to 15 grains 3 or 4 times daily.

Saloquinine. (Quinine Salicylic Ether—Salicylquinine.)

This is a white crystalline powder, perfectly tasteless and odorless, insoluble in water, soluble in acidulated water and moderately soluble in alcohol or ether. It is incompatible with acids. It is a tasteless substitute for quinine and salicylic acid. It contains 73% of quinine. The dose is 8 to 30 grains.

Saloquinine Salicylate.

It is prepared by adding salicylic acid to a hot alcoholic solution of saloquinine. It is a white, tasteless powder, sparingly soluble in water, soluble in chloroform and hot alcohol. It is incompatible with alkaline liquids. It is recommended for acute rheumatism, neuralgia, and gonorrhoea inflammations in doses of 15 grains.

Salosantal.

This is a composition in which salol and sandalwood oil are the ingredients.

Salubrin.

This is put up as a Swedish specialty which is stated to contain 22% ethyl acetate (acetic ether), 48% of ethyl alcohol, and .03% of ethyl aldehyde. The *Pharmaca Composita* (Swedish) gives the following formula:

Acetic acid.....	parts 2
Acetic ether.....	parts 23
Alcohol	parts 50
Water	parts 23

Acetic acid of the Swed. Pharm. contains 25% of absolute acetic acid.

Salumin. (Aluminum Salicylate.)

This is a white powder, insoluble in water. It is used as an external antiseptic in nasal and pharyngeal catarrh, ozena, etc. It is used as a dusting powder, either pure or diluted.

Salvitæ.

This is the composition as given on the label:

Magnes. sulph.
Sod. sulfate.
Sodium forma-benzoate.

Sodium, lithium and strontium lacto-citrate.

Caffeine.

Quinine.

Lacto-phosphate of sodium and calcium.

Sodium and potassium bicarbonates with citric and tartaric acids.

Sanatogen.

This is a combination of casein, 95%, and sodium glycerophosphate, 5%. It is a fine white powder soluble in water. It is recommended as a food in weaknesses of the digestive function, and as a nerve nutrient in neurasthenia, marasmus, etc.

Sancodol. (160)

This is described as an emulsion of oils of santol, abies balsamea, and copaiba.

Sandal-Etto.

Each fluidounce is stated to contain

Saw palmetto.....	gr. 60
Coca leaves.....	gr. 20
Kola nut.....	gr. 20
Damiana.....	gr. 20
Nux vomica.....	gr. 5
Sandalwood.....	gr. 5
Potassium iodid.....	gr. 4
Ammonium chlorid.....	gr. 4
Aromatics, q. s.	

Sanford's Extract of Jamaica Ginger.

This is stated to contain selected ginger, choice aromatics, and genuine French brandy.

Sangostol.

This is a solution said to contain iodine in combination with both calcium and iron. It is used in rachitic and scrofulous diseases.

Sangrenal Preparations. (121)

These are prepared from the fresh suprarenal glands of sheep. There are three forms, the powder, lozenges, and tablets.

Sanguetine. (117)

This is described as the pure crystallized hemostatic and blood-pressure raising principle of the suprarenal gland.

Sanguetine Chlorid Solution.

This is a 1:1000 solution of sanguetine chlorid in normal saline liquid.

Sanguinal.

This is stated to contain 40% of the natural salts of blood, 10% of oxy-hemoglobin, and 44% of peptonized blood albumin. It is marketed only in the form of pills.

Sanguinol. (148)

This is stated to be liquid petrolatum with nitrate of sanguinarine and antiseptics. It is used for spraying the nose and throat. It is said to be made after the formula of the Brooklyn Throat Hospital.

This name is also applied in Europe to a preparation made from the blood of young calves. It is a dark red, fine powder, soluble in water.

Sanitaris Metral Disks. (136)

These are stated to be made with a vehicle of borated glyco-gelatin, each disk containing ichthyol, 5 grains, anti-pyrin, 1 grain, zinc sulfate, $\frac{1}{4}$ grain, zinc chlorid, $\frac{1}{2}$ grain, creosote, $\frac{1}{8}$ grain, benzoic acid, 2 grains, fluid hydragric, $\frac{1}{4}$ grain, extract of henbane, $\frac{1}{4}$ grain, menthol, $\frac{1}{10}$ grain, and boroglyceride.

Sanitas.

According to the specifications of a U. S. patent, issued in 1883, it is made by the passage of oxygen through turpentine or other hydrocarbon containing a terpene or cymene. It is used to make a disinfecting oil, soap, insecticide, sheep dip, salve, etc.

Sanmetto.

This is said to be a blending of true and saw palmetto in a pleasant, aromatic vehicle.

San-Methyl. (84)

This is stated to be a 10-minim capsule containing methylene blue, salol, santal, cubeb, copaiba and matico.

Sanoform. (Methyl Ether of Diiodosalicylic Acid.)

A white, odorless, tasteless, permanent powder containing 63% of iodine.

It is soluble in alcohol, ether or petroleum. It is a drying antiseptic like iodoform. On contact with the moist surfaces of tissues it is said to slowly liberate iodine and salicylic acids.

Sanolin-Bahr.

This is stated to be a solution of salicylic acid, glycerin and oil of orris in alcohol. It is used for perspiring feet.—Ph. Ztg.

Sanose.

This is a dietetic preparation stated to contain 80% of casein and 20% of albumose. It is a white, odorless and tasteless powder which forms an emulsion-like mixture when stirred with water. It is recommended as a useful food in wasting diseases such as tuberculosis, cancer, diabetes, etc.

Sanosin.

This was heralded abroad as a new remedy for tuberculosis. It was described as being a mixture of sulfur, charcoal, powdered eucalyptus leaves, and oil of eucalyptus. It was used by igniting it and inhaling the fumes.

Santal-Grape. (84)

This is described as a 5-minim capsule containing East India oil of santal.

Santal-Midy.

These are 5-minim spherical capsules containing pure oil of sandalwood.

Santal Ostind.

These are described as 5 min. santal pearls.

Santalets. (182a)

These are described as globular gelatin pearls, each containing 5 minims of pure santal oil.

Santaloids. (187)

These are described as capsoids each containing 5 minims of East India sandalwood oil.

Santaloids Comp. contain 1 minim each of East India sandalwood oil and oil of copaiba, and 3 minims of Haarlem oil.

Santalol Formaldehyde.

This is a patented product of the action of formaldehyde on oil of santal in the presence of inorganic acids. It is a thickish, yellowish liquid which breaks up in the presence of water into its components. It is employed in inflammatory conditions of the kidneys and bladder.

Santheose.

This is the name given to a theobromine of French manufacture.

Santolin Capsules.

Each 10-minim capsule is stated to contain oleoresins of cubebs, copaiba and matico, English oil of santal, salol, and diastase.

Santyl. (109)

This is the salicylic ester of santalol, containing 60% of the latter. According to the German patent, the neutral esters of sandalwood oil are produced by heating the oil with the respective anhydrides and subsequent purification of the product. This is a yellowish oil with a faintly balsamic odor and taste. It is insoluble in water but soluble in about 10 parts of alcohol and in ether. It is said that to pass the stomach unchanged but is slowly split up in the intestines into santalol and salicylic acid. It is given for the same purposes of oil of santal. It is put up for the market in half-ounce vials and 7-drop capsules.

San-Urina Cordial. (136)

This is stated to be composed of saw palmetto berries, damiana leaves, buchu leaves, uva ursi, juniper, sandal, eucalyptus and claret wine.

Saparaform.

This is a paraform-soap solution obtained by dissolving paraform to the extent of 3 to 5% in liquid potassa soap.

Sapocarbol.

This is a solution of cresols and potassium soap. It is used as an antiseptic.

Sapodermin.

This is a superfatted soap containing mercury. It is put up in two strengths, viz., 1% and 1/5% respectively of mercury albuminate.

Sapolan.

This is a preparation said to contain 5 parts of crude naphtha obtained by distillation, 3 parts of lanolin and 3 or 4% of anhydrous soap. It is a brownish-black ointment which resembles tar preparations in its effects.

Sapophthalam.

This is the name given to a neutral coconut oil-potassa soap containing added glycerin.

Sapozol.

This is described as liquor cresoli saponatus.

Saprol.

This is a dark brown, oily substance, prepared by mixing crude cresols with hydrocarbons from petroleum containing about 40% of the former. It is insoluble in water, and is inflammable. It is used as a disinfectant and deodorant of stools.

Saratoga Ointment. (94)

This is stated to be made from boric acid, zinc oxid, eucalyptol and petroleum.

Satyrin.

This is stated to contain saw palmetto, false bittersweet, couch grass, "moyra pauma," phosphorus, syrup, and aromatics.

Savonal.

This is a liquid soap made by saponifying olive oil with potassium hydroxid, precipitating the fatty acids with hydrochloric acid, dissolving the precipitate in alkalis to complete neutrality and adding glycerin and water.

Savaresse's Capsules.

These are capsules made of membrane, each one containing 10 drops of sandalwood oil.

Saxin. (32)

This is a sweetening agent said to be 600 times sweeter than sugar.

Scabiol.

This is a compound of storax (20%) alcohol and water, and is a brownish-red, odorless liquid. It is used chiefly for scabies. It is said not to soil the clothing nor to irritate the skin.

Scammonin. (Convolvulin.)

This is derived from scammony resin. It is a whitish powder soluble in alcohol, ether or solution of potassium hydrate. It is a hydragogue cathartic in doses of 3 to 8 grains.

Schistiol.

This is a substance derived from some bituminous rocks found in France. It is in masses of a dark brown color and a bituminous odor. It is applied externally for skin diseases.

Schlotterbeck's Compound Mixture of Glyconin.

See Mixture Glyconin Comp.

Schlotterbeck's Compound Mixture of Hydrastis.

This is stated to contain hydrastis, syrup rhubarb and potassium, "sol. pepsin," and a pancreatic solution (prepared from the fresh stomach and pancreas of the pig.)

Schlotterbeck's Syrup Mangan Comp.

See Syrup Mangan Comp.

Schlotterbeck's Syrup Phospho-Chloride Iron.

See Syrup Phospho-Chloride Iron.

Schreyer's Toothache Pellets.

Oil of clove.....gr. 15
Oil of cassia.....gr. 15
Black pepper.....gr. 60
Sodium chlorid.....gr. 60
Acaciagr. 60
Make into pellets weighing 8 grains each.—Wittstein.

Schroer's Hair Dye.

According to Fischer's analysis, this is a solution of 1 part of silver nitrate in 10 parts of water and 1 part of strong ammonia, colored with copper sulfate.

Schultze's Blood-Purifying Powder.

Sodium sulfate, dried.....parts	2
Magnesium sulfate, dried...parts	14
Sodium chlorid.....parts	3
Tartaric acid.....parts	3
Sodium bicarbonate.....parts	4

—Hager.

Scopolamine Hydrobromid.

This is identical with hyoscine hydrobromid but is much lower in price.

Scott's Emulsion.

This is stated by the manufacturers to contain 45% of cod liver oil, 14% of glycerin, 6 grains of calcium hypophosphite and 3 grains of sodium hypophosphite to the fluidounce.

Scopomorphine.

See Euscopol.

Sedative Compound Tablets.

Each tablet is stated to contain	
Dried sulfate of iron.....gr.	1
Extract of valerian.....gr.	1
Extract of musk root.....gr.	1
Asafetida.....gr.	1
Arsenous acid.....gr.	1/60

Sedative Granules.

Each granule is stated to contain	
Aconitia.....gr.	1/200
Digitalin.....gr.	1/200
Gelsemin.....gr.	1/120
Veratrine sulfate.....gr.	1/100
Extract of henbane.....gr.	1/16

Secacornin. (98)

This is a standardized sterile liquid preparation of ergot, 1 cc. being equal to 4 g. of drug. This was formerly known as ergotin.—Keller.

Sedalole Syrup. (182a)

This is stated to represent tolu, blood-root, squill, wild cherry, balm of gilead buds, and heroin (1/24 grain to the fluidram).

Seigel's (Mother) Curative Syrup.

See Shaker Extract of Roots.

Seiler's Tablets.

As put up by manufacturers, these tablets generally are composed of about the following:

Sodium bicarbonate.....gr.	5
Sodium baborate.....gr.	5
Sodium chlorid.....gr.	5
Sodium salicylate.....gr.	7/24

Sodium benzoate.....gr.	7/24
Thymol.....gr.	7/48
Eucalyptol.....gr.	7/48
Menthol.....gr.	7/96
Oil of wintergreen.....gr.	7/96

Senckenberg's Migraine Pastilles.

Each contains

Antipyrin.....gr.	4 1/2
Acetanilid.....gr.	7 1/2
Rhubarb.....gr.	3/4
Calamus.....gr.	1/3
Cinchona.....gr.	1/2

—Ph. Centralh.

Senecin and Viburnin Tablets. (160)

Each tablet is stated to contain

Extract of senecio.....gr.	1 1/2
Extract of virburnum.....gr.	1
Extract of caulophyllum.....gr.	1/2
Extract of belladonna.....gr.	1/20
Reduced iron.....gr.	1
White alkaloid of hydrastis.....gr.	1/30
Aromatics and carminatives.	

Sennine.

This is sold in a 2-ounce box with an inner sprinkle-top cover, and is stated to be a combination of boric acid and phenol (carbolic acid).

Sepdelin.

This is a syrupy liquid of pleasant taste containing 1/2% of iron iodid. It is a German specialty.

Serosine.

A white powder, which is a mixture of acetanilid and sodium bromid.

—Notes on New Remedies.

Serum Paste.

This is a mixture of fresh serum from ox-blood mixed with 25% of zinc oxid and sterilized at 70° C. It is used as a covering for diseased surfaces.

Seven Barks. (Vinegar of Seven Barks—Acetum Hydrangeae.)

The label states that the bottle contains 3 ounces of vinegar of seven barks concentrated to 1 ounce; farther on it is stated that it is made according to this formula:

Extract of hydrangea.....lb.	1
Extract of poke.....lb.	12
Extract of culver.....lb.	12
Extract of dandelion.....lb.	12
Extract of ladies' slipper.....lb.	12
Extract of colocynth.....lb.	12
Extract of blood root.....lb.	6

Extract of blue flag.....lb.	6
Extract of stone root.....lb.	6¾
Extract of golden seal.....lb.	7½
Extract of mandrake.....lb.	24
Extract of black cohosh.....lb.	24
Extract of butternut.....lb.	48
Spirit of sea salt.....lb.	14½
Aloes	10
Borate of soda.....lb.	15
Infusion of 4½ lbs. capsicum.	
Sassafras, powder	11
Ginger	6
Sugar-house syrup	40
Water, to make.....gal.	98

Sevetol. (Emul. Sevi Comp.) (221)

This is described as a natural emulsion of mixed fats and oils containing mixed fats and oils, 30%, proteids, 3½%, carbohydrates, 3½%, alcohol, 5¾%. The proteids and carbohydrates are said to be in an assimilable form.

Sextonol Tablets. (178)

These are 5-grain tablets, each containing 2 grains each of calcium and sodium glycerophosphates, ½ grain of iron glycerophosphate, ¼ grain of manganese glycerophosphate, and 1/200 grain of strychnine glycerophosphate.

Shaker Digestive Cordial.

The following is the formula given by the manufacturer:

Extract of blue flag...lb.	1, oz.	2¾
Ext. of culver's root...lb.	1, oz.	2¾
Extract of stillingia...lb.	1, oz.	2¾
Extract of poke root...lb.	1, oz.	2¾
Extract of butternut...lb.	1, oz.	2¾
Extract of dandelion...lb.	1, oz.	2¾
Extract of prince's pine....oz.		15
Extract of mandrake.....oz.		12
Extract of gentian.....oz.		6
Extract of colocynth.....oz.		6
Extract of cohosh....lb.	1, oz.	14
Dextrose	lb.	520
Boric acid	lb.	17
Dextrin	lb.	442
Scale pepsin	lb.	5½
Maltose	lb.	182
Hydrochloric acid C. P....	sufficient	
Sodium chlorid	lb.	9
California sherry wine....	gal	90
Water, to make.....gal.		215

The extracts are stated to be made by the special process peculiar to the Shakers of Mount Lebanon, N. Y.; the pepsin is made according to Russell's patented process; the hydrochloric acid

is added in sufficient quantity so that the mixture contains ½%.

Shaker Extract of Roots. (The Siegel Curative Syrup.)

The following is the formula given by the manufacturer:

Extract of blue flag.....lb.	6¼
Extract of culver.....lb.	6¼
Extract of stillingia.....lb.	6¼
Extract of poke.....lb.	6¼
Extract of butternut.....lb.	6¼
Extract of dandelion.....lb.	6¼
Extract of prince's pine.....lb.	5
Extract of mandrake.....lb.	4
Extract of gentian.....lb.	2
Extract of colocynth.....lb.	2
Extract of black cohosh.....lb.	10
Aloes	9
Powdered capsicum	1
Powdered sassafras bark....	10
Borate of soda.....lb.	10
Spirit of sea salt.....lb.	12
Sugar-house syrup	gal. 30
Water, to make.....gal.	90

Shiloh's Consumption Cure.

This is stated to contain glycerin, oil of tar, peppermint, extract of lobelia, extract of licorice, terpin hydrate, syrup, and ¼ grain of heroin and 2½ minims of chloroform (in the form of chloroform water) to the fluidounce.

Sic.

This is a serum obtained from the substance and the cortex of the suprarenal gland of the ox. It is a light yellow liquid which is said to be especially useful in whooping cough.

Sicco.

This is a reddish-brown crystalline powder, soluble in water, made from hematogen. It is used mainly for anemia in doses of 15 to 30 grains.

Siccals.

These are dry mixtures of various oils or oleoresins, such as castor or santal oils or oleoresin of male fern, with magnesium carbonate and glycerin.

Sidonal. (Piperazine Quinate.)

This is the normal salt of piperazine and quinic acid. It is a white crystalline powder, of a faint acid taste, and is very soluble in water. Its incompatibilities are those of the alkaloidal salts

generally. It is recommended as a uric acid solvent in gout, neurasthenia, etc., in doses of 15 to 20 grains 5 to 6 times daily, well diluted with water.

Sidonal New.

This is the anhydride of quinic acid. It is used the same as sidonal. It is a white, odorless powder, very soluble in hot or cold water or in alcohol.

Silberol.

This is chemically silver sulfocarbonylate. It is recommended for use as injection in gonorrhea, for some eye diseases, etc.

Silver Casein.

See Argonin.

Silver Citrate.

See Itrol.

Silver Fluorid

See Tachiol.

Silver Iodid.

This is a voluminous yellow powder, which is used internally for syphilis in doses of 1/12 grain and as an injection for urethritis in 5 to 10% solutions.

Silver Lactate.

See Actol.

Silver Nucleide.

See Nargol.

Silver Picrate.

See Picratol.

Silver Protalbin.

See Largin.

Silver Proteinate.

See Novargan.

Silver-Vitellin.

See Argyrol.

Singleton's Eye Ointment.

This has apparently the same composition as ointment of nitrate of mercury.
—Cooley.

Singleton's Ointment.

According to Hager, this is a mixture of 1 part of arsenic sulfid and 24 parts of hog's lard.

Sirolin (Sirsol.) (98)

This is a syrupy solution of thiocol, containing 6 grains of thiocol to the fluidounce.

Snyder's All-Food Emulsion.

This is stated to be made from cod liver oil, Iceland moss and fruited barley malt whisky.

Sodium Betanaphtholate.

See Microcidin.

Sodium Borosalicylate.

This is said to be prepared by heating together 5 parts of boric acid, 13 parts of sodium salicylate and 28 parts of water. The syrupy liquid is then evaporated upon a sand bath until it forms a white mass. It is stated to be an active antiseptic.

Sodium Cacodylate. (Sodium Dimethylarsenate.)

This is a white powder, very soluble in water. Its action is very similar to that of other arsenic compounds, but is much less toxic because the arsenous acid is liberated slowly in the body. The dose is 1/2 to 2 grains.

Sodium Cinnamate.

See Hetol.

Sodium Diiodosalicylate.

This is in colorless leaflets or needles which are soluble in 50 parts of water. It is used as an analgesic in doses of 3 to 10 grains several times daily, and is used externally as an antiseptic.

Sodium Fluorid.

See Fluorol.

Sodium Glycerophosphate.

Owing to its extreme deliquescence, this is marketed as a moist, colorless mass containing 75% of the salt. It is used in the form of solutions and syrups, also hypodermically. For hypodermic use it should be dissolved in boiled, distilled water. The dose is 3 to 10 grains.

Sodium Ichthyol.

See Ichthyol-Sodium.

Sodium Lygosinate.

See Lygosine.

Sodium Perborate.

See Perborate of Sodium.

Sodio-Phos. Comp. (Liquid Sodium Phosphate Comp.) (182a)

Each fluidounce is stated to contain 1 ounce of C. P. sodium phosphate.

Sohn's Wine Hypophosphites Comp.

See Elixir Vigorans.

Solurol. (Thyminic Acid.)

This is a yellowish brown, almost tasteless powder, soluble in water. It has the property of dissolving its own weight of uric acid at a temperature of 20° C. and more is dissolved at higher temperatures. The dose is 4 to 8 grains 3 times a day.

Sol. Anti-Phthisis. (118)

Each fluidounce is stated by the manufacturers to contain

Terebene	m.	5
Acetylphenylhydrazin	gr.	1
Guaiacolyalerianacetate	gr.	20
Caffeine citrated	gr.	30
Nitric acid	gr.	$\frac{1}{4}$
Chromic acid	gr.	$1\frac{1}{8}$

It is also stated to contain 20% of alcohol.

Solution Bismuth and Hydrastia.

See Blenol.

Solution of Bromide of Strontium. (Paraf-Javal.)

Each tablespoonful is stated to contain 30 grains of strontium bromid.

Solution of Burdock, Compound.

See Liquor Lappae Comp.

Solution of Chloro-Phosphide of Arsenic.

Arsenous oxid	gr.	15
Diluted hydrochloric acid...	fl.oz.	$1\frac{1}{2}$
Distilled water	sufficient	
Phosphoric acid.....	a few drops	

Dissolve the arsenous acid in the hydrochloric acid and $3\frac{1}{2}$ fluidounces of water by the aid of a gentle heat, add water to make 1 pint, and then the phosphoric acid.—Fr. Sieker.

Solution of Ferrous Malate. (6)

Each fluidram is stated to contain 4 grains of iron malate.

Solution of Hypophosphites. (180)

This preparation is described as an aqueous solution of the hypophosphites of lime and soda, each fluidounce containing 40 grains of the combined salts.

Solution of Hypophosphites Comp. (221)

Each fluidounce is stated to contain 4 grains each of calcium and potassium hypophosphites, 2 grains of iron hypophosphite, 1 grain of sodium, manganese and quinine hypophosphites, and $1/32$ grain of strychnine hypophosphite.

Solution Iodo Bromide of Calcium Compound. (194)

The component parts are stated to be bromin, iodin, chlorin, calcium, magnesium, iron, sodium and potassium.

Solution of Lactate of Strontium. (Paraf-Javal.)

Each tablespoonful of this solution contains 30 grains of lactate of strontium.

Solution of Lecithin. (70)

Each fluidram is stated to contain 1 grain of lecithin.

See also Lecithin Solution and Lecithine Clin.

Solutol and Solveol.

These are mixtures of crude cresol and solution of soda containing 25 to 50% of cresol.

Solvosal. (Solvosal-Lithium.)

This is soluble in water and is used as a diuretic and antiarthritic, mainly in gouty conditions. Owing to its mild action, it is claimed to be superior to the ordinary salicylic combinations. The dose is 4 to 8 grains 3 or 4 times a day.

Solykrin Pills.

These are stated to be composed of 15 parts of solveol, 5 of lysol, and 2 of creolin. They have been recommended for puerperal fever.

Somatose.

This is a preparation in which the albuminous, nutritive portions of flesh have been converted into soluble albumoses. It is a pale-yellowish powder, readily soluble in water, forming an almost odorless, tasteless solution. It is employed as a food for persons suffering from weak digestion, or for invalids and convalescents, $\frac{1}{2}$ to 1 av. ounce being given at a time, in milk, cocoa or soup.

There is also Somatose-Cocoa, Somatose-Chocolate, and Somatose Biscuit. See also Lacto-Somatose and Ferro-Somatose.

Sommerbrodt's Creosote Capsules.

See Creosote Capsules.

Somnal.

This is said by the Ph. Rundsch. to be an alcoholic solution of chloral hydrate and urethan.

Somnin.

This is described as a compound of boric acid and phenols and is used as an antiseptic.

Somnoform.

This is the name given to an anesthetic mixture composed of

Ethyl chlorid	parts 12
Methyl chlorid	parts 7
Ethyl bromid	part 1

Somnone. (188)

Each fluidram is stated to represent 30 grains of poppy (denarcotized), 20 grains of lupulin, and 10 grains of lactucarium.

Somnos. (141)

This is also called elixir trichlorethidene propenyl ether. It is stated to contain 25 grains of chloral glycerolate per fluidounce, and also contains 2% of alcohol. The chloral glycerolate is stated to be a definite substance obtained by the chemical reaction of glycerin upon chloral, containing no uncombined chloral. It is used as a hypnotic and cerebral sedative in doses of 2 to 4 fluidrams.

Somnus Sedatus. (135)

Each fluidounce is stated to represent

Chloral hydrate	gr. 40
Strontium bromid	gr. 40
Lithium bromid	gr. 40
Passion flower (green root) ..	gr. 80
Henbane (green leaves)	gr. 16
Cannabis indica	gr. 8

Sophol.

This is a name applied to a combination of formaldehyde-nucleinic acid and silver, containing 20% of the latter. It is a yellowish white powder.

This name is also applied to an easily

melting powder which is recommended for external use as an antirheumatic in place of mesotan.

Sorbefacin.

This is described as a soft, plastic surgical dressing containing menthol, thymol and boracic acid.

Soson.

This is described as pure, unaltered meat albumen in powder form. It is odorless and tasteless and is said to contain 98½% albumen. It is used as a nutrient.

Sourwood Compound. (Diuretic Elixir.) (131)

The formula is given as follows:

Oxydendron arboreum	gr. 8
Hydrangea arborescens	gr. 64
Eupatorium purp	gr. 64
Polytrichum junip	gr. 64
Eryngium yuccaefol	gr. 32
Stigmata maidis	gr. 32
Tr. apis mellif	drops 2
Lithii benzoas	gr. 24
Spiritus juniperi	fl.dr. 4

Each fluidounce represents 30 grains of the fresh (green) drugs in the above proportions, and 3 grains of benzoate of lithia.

Sozal.

This is chemically aluminum paraphenolsulfonate. It is in brownish crystals which are of a faint carbolic odor and of a strong astringent taste. It is soluble in water, alcohol and glycerin. It is used in 1% solutions as an injection in tuberculous ulcers, suppurations and cystitis.

Soziodol.

There are several salts of sozoidolic (or diiodoparaphenolsulfonic) acid, but the sodium salt is commonly dispensed under the name soziodol. It is in white odorless crystals, soluble in 12 parts water and in alcohol or glycerin on warming. An internal and external antiseptic in infectious diarrhea, phthisis, diabetes, wounds, diphtheria, soft chancre, parasitic skin diseases, etc.

Dose: 15 to 45 grains daily. Externally it is used in a 1 to 8% solution or 10 to 25% dusting powder or ointment.

Sozoiiodolic acid is also used in 2 to 3% aqueous solution as an antiseptic.

There are also mercury, potassium, zinc, lithium, barium, manganese and lead compounds of sozoiiodol.

Spasmotin. (Sphacelotoxin.)

This is a poisonous principle extracted from ergot. It is yellow, amorphous powder soluble in alcohol and ether, and is used as a hemostatic and emmenagogue in amenorrhea, dysmenorrhea, etc., in doses of $\frac{1}{2}$ to $1\frac{1}{2}$ grains.

Sparteine Sulfate.

This is an alkaloidal salt from *Sarothamnus scoparius*. It is in colorless, odorless, somewhat bitter, slightly hygroscopic crystals, easily soluble in water or alcohol. It is a heart tonic like digitalin.

Dose: Single, $\frac{1}{8}$ to $\frac{1}{4}$ grain; daily, $\frac{3}{4}$ to $1\frac{1}{2}$ grains in pills or powders. Maximum dose, single, $\frac{1}{2}$ grain; daily, $1\frac{1}{2}$ grains.

Specific Medicines. (118)

The manufacturers state that they have become convinced "that ordinary fluid and solid extracts are crude and imperfect." They began a systematic study of each plant, and the perfected result was named a Specific Medicine (not a specific tincture), to distinguish it from all other preparations, for it specifically represents the active principles of the drug yielding it.

The process of manufacture is not given, except to state that almost all of them are liquid and are made from crude drugs—i. e., plant parts. Each fluidounce is stated to represent 480 grains (1 troy ounce) of crude material (unless otherwise stated). The above remarks apply to most of these medicines. The following are exceptions:

Acid Hydrochloric Dilute.—A solution of chemically pure hydrochloric acid.

Acid Carbolic.—A solution of pure crystallized carbolic acid in glycerin.

Acid Sulfurous.—This is alcohol, sp.

gr. 0.820, saturated with sulfurous acid gas.

Cantharis.—An alcoholic solution of the characteristic principles of cantharides.

Carbo Veg.—A trituration with milk sugar, selected powdered wood charcoal being used.

Cinnamon.—An alcoholic solution of the oil of Ceylon cinnamon.

Cuprum.—Made the same as Rademacher's tincture of acetate of copper.

Elaterium.—Each pint represents 60 grains of elaterin.

Ferri Aceticus.—Made of the proper salts and pure wine vinegar, according to Rademacher's original formula.

Phosphorus.—A saturated solution of phosphorus in alcohol.

Podophyllin Triturated.—Made of true dark podophyllin (precipitated in pure water) and pure milk sugar.

Sodium Sulfite and Phosphate.—These are not the commercial crystallized salts. Each preparation is mostly free from water, and much stronger than the commercial crystallized salts.

Tela Araneæ.—An alcoholic tincture of house spider web.

These explanations are taken from the manufacturers' catalog.

Spencer's Chloramine Pastilles. (221)

These are stated to contain ammonium muriate as the chief ingredient. They are used for hoarseness, sore throat, bronchitis, and cough.

Spermine-Krieger.

This is a sterilized solution prepared from various glands of healthy young animals. It has been recommended for various diseases. The dose is 3 to 6 minims, which may also be administered hypodermically. The dose is to be increased by 1 minim per day. It is marketed in 1-gram flasks.

Spermin-Marpman.

This is described as a solution of the soluble substances of the fresh testicles of the steer. It is given by the mouth in

doses of 5 to 20 drops 2 or 3 times a day.

Spermine-Poehl.

This is the hydrochlorid of a base existing in the testicles of animals. It is marketed in the form of a 2% solution, which is used hypodermically in doses of 15 minims daily or every other day for nervous disorders accompanied by anemia (neurasthenia, angina pectoris, locomotor ataxia, etc.). It is also put up in the form of an elixir.

Sphygmogenin.

This is a name given to the active constituent of the suprarenal capsules.

Spinatica.

This is described as a sovereign cerebro-spinal stimulant, 10 minims of which contain 1/300 grain of phosphorus and proportional amounts of "nux," ignatia, columbo, gentian, quassia, cinchona and aromatics.

Spinol. (Spino-Ferrinum.)

This is described as a form of organic iron derived from the vegetable spinach. It is put up in a dry form, which is an odorless, almost tasteless powder, and a syrupy form (spinolum saccharatum).

Spiroform.

This is a white, crystalline powder, insoluble in water but readily soluble in alcohol and other solvents. It is odorless and almost tasteless. It is recommended as an antirheumatic, analgesic and uric acid solvent. The dose is 7½ to 15 grains 3 to 5 times daily.

Spirosal.

This is the salicylic acid ester of monoglycol. It is an almost colorless and odorless oily liquid. It is readily soluble in alcohol, ether and chloroform. It is applied 2 or 3 times daily in cases of rheumatism. It is said to be non-irritant and to be readily absorbed by the system.

Stafford's Boro-Fluorine.

This is the analysis by Drs. Endemann and Saarbach, according to the manufacturers: Boric acid, 19¼%, sodium fluoride, 5¾%, benzoic acid, 3%, formaldehyde, ½%, gum vehicle (dextrin and dextrose), 42%, water, 29½%. It is used as a germicide.

Stagnin.

This is a hemostatic substance obtained by the extraction of the spleen of horses. The product obtained is a yellowish brown powder which is marketed in the form of an aqueous solution. It is used mainly in gynecological practice. The dose is 15 to 45 minims daily.

Steagine.

This is a compound of zinc stearate and paraffin which has been introduced into France for the treatment of skin diseases.

Stearate of Zinc Compound. (121)

This is put up with various combinations, viz., boric acid, peru balsam, menthol, tar, acetanilid, resorcin, aristol, etc.

Stearns' Wine. (187)

This is a medicated wine, each fluid-ounce of which is stated to contain 4 grains of alcoholic extract of fresh cod liver (made from fresh livers received in alcohol and containing their full amount of oil) and 4 grains of peptonate of iron, in a menstruum containing 15¼% of alcohol. The product contains about ¼% of oily extractives. It has been introduced as a substitute for cod liver oil. The dose is 1 tablespoonful 3 or 4 times a day.

Steresol.

Shellac	parts	270
Benzoin	parts	10
Tolu balsam	parts	10
Phenol	parts	10
Oil of cinnamon.....	parts	6
Saccharin	parts	6
Alcohol, to make.....	parts	1000

This is recommended by Berlioz as an antiseptic skin varnish.

Stomalix.

Each tablespoonful is stated to contain

Fluid ext. bitter orange peel.....	gr. 3
Fluid ext. condurango.....	gr. 3
Fluid ext. cinchona.....	gr. 3
Pure pepsin.....	gr. 4
Bismone (colloidal bismuth oxide)	gr. 4
"Citrate soda ammoniated".....	gr. 5

Stomatol.

This is an antiseptic and preservative said to consist of terpeneol, soap, alcohol, glycerin, water and aromatics.

Stomosan.

This is stated to contain methylamine phosphate and is used as a gall-stone preventive.

Stonebraker's Liniment.

The following formula is taken from the patent office reports:

Alcohol	gal.	1½
Turpentine	gal.	¾
Oil of origanum.....	lb.	½
Capsicum	oz.	1
Barbadoes tar	oz.	4
Ammonia	lb.	2¼
Linseed oil	oz.	10
Oil of amber.....	oz.	5
Oil of juniper.....	oz.	5
Seneca oil	oz.	1½
Castile soap	lb.	1½

Stonebraker's Pain Killer.

The following formula is taken from the patent office reports:

Alcohol	gal.	1½
Peru balsam	lb.	1½
Venice turpentine	oz.	6½
Olive oil	oz.	1½
Sulfuric ether	lb.	4½
Camphor	oz.	8½
Laudanum	oz.	5½
Tincture of capsicum.....	oz.	8½
Tincture of myrrh.....	oz.	8½

Stovaine.

Chemically this is amylene hydrochlorid. It crystallizes in small, brilliant scales, is very soluble in water, methyl alcohol, or acetic ether, but requires 5 parts of absolute alcohol for solution and is only slightly soluble in ether or acetone. It is quite stable and its solutions may be sterilized at 115° C. without decomposition. It is incompatible with alkalis and all alkaloidal reagents.

It is used as a local anesthetic in 4 to 10% solutions in place of cocaine. It is only ⅓ to ½ as toxic as the latter. The dose internally is 1/30 grain. It is applied locally to the eye in 4% solution, in laryngology, in 5 to 10% solutions, and hypodermically in 1% solution. It is sold in the form of powder, solution, triturates and pastilles.

Streptocol.

This is a soluble preparation stated to contain 60% of cresol.

Strzyzowski's Mixture.

This is a preparation of iron pyrophosphate, quinine hydrochlorid and sodium bromid. The dose is a teaspoonful 2 or 3 times daily after the principal meals.

Strophanthin.

This is a glucoside from *Strophanthus hispidus*. It is a white crystalline powder, soluble in water and alcohol. It is used as a heart tonic in place of digitalis. Dose: 1/300-1/200-1/120 grain. The physiological antidotes are aconite and veratrum viride.

Stuart's Dyspepsia Tablets.

According to the manufacturers, these are composed of vegetable and fruit essences, pure concentrated tincture of hydrastis, lactose (extracted from milk) [i. e., milk sugar], "nux," pure aseptic pepsin, bismuth, and flavored with ginger. Elsewhere in the same pamphlet, it is stated that they are composed of fruit salts, vegetable essences, pepsin and bismuth; and again, "composed of vegetable and fruit essences, pure pepsin, golden seal, ginger and the digestive acids"; and also, "composed of harmless digestive principles, vegetable essences, pepsin and golden seal."

Stuart's Calcium Wafers.

These are stated to contain "in concentrated form the newly discovered preparation from sulphur (calcium sulphide), golden seal, quassia, eucalyptus, belladonna, and the vegetable alteratives and laxatives."

Stypticin. (Cotarnine Hydrochlorid.) (120)

Cotarnine is an oxidation product of narcotine, one of the alkaloids of opium. Stypticin is a yellow, crystalline powder, soluble in water and in alcohol. It is a hemostatic and uterine sedative, and is recommended for all forms of uterine hemorrhage. It is also used in bleeding from the bladder, from the nose, after extraction of teeth, etc. The dose is $\frac{3}{4}$ grain 4 or 5 times daily. It may be given hypodermically 2 cc. of a 10% solution.

Styptol. (Cotarnine Phthalate.) (109)

This is yellow, microcrystalline powder which is freely soluble in water. Its action resembles that of stypticin. Compounds with phthalic acid are said to have especial hemostatic properties. It has been recommended for uterine hemorrhages in doses of 1 grain 3 to 5 times daily. It is also used externally as a dusting powder for bleeding wounds.

Styracol. (Guaiacol Cinnamate.)

This is in colorless, odorless and tasteless crystalline needles, insoluble in water but readily soluble in alcohol, acetone or chloroform. It contains 55% of guaiacol which is split off by the action of alkalis. It is claimed to be an intestinal antiseptic and to combine the antituberculous properties of guaiacol and cinnamic acid. It is said to liberate in the intestinal canal as much as 85% of its guaiacol content. It is recommended for the initial stage of phthisis, chronic enteritis, and intestinal disturbances in general. The dose is 15 grains 3 or 4 times a day.

Subcutine. (Anesthesin Paraphenol Sulfonate.)

This has the advantage over anesthesin of greater solubility so that it can be used hypodermically. It is a white powder soluble in 100 parts of water. It is used subcutaneously as a 1% solution to produce local anesthesia.

Subeston.

This is a basic diacetate of aluminum which is used as an antiseptic, astringent and deodorant for infected wounds.

Sublamine. (178)

This is a compound of 1 molecule of mercuric sulfate and 2 molecules of ethylene-diamine. It is in white needles which are very soluble in water, soluble in 10 parts of glycerin, and sparingly soluble in alcohol. It contains about 44% of mercury, it does not precipitate albumen, it is incompatible with sodium chlorid, and it should not be exposed to the air. It is a disinfectant similar to mercuric chlorid, over which it has the advantage of being non-irritating, more penetrating and readily soluble. It is used in a 1:1000 solution for skin disinfection and 1:5000 solution for irrigations of the bladder, etc.

Succus Alterans. (Alterative Juice.) (117)

This is described by the manufacturers as the preserved fresh juices of *Stillingia sylvatica*, *Smilax sarsaparilla*, *Phytolacca decandra*, *Lappa minor*, and *Xanthoxylum carolinianum*.

Sucramine.

This is the ammonium compound of saccharin.

Sucrol.

See Dulcin.

Sulfanilic Acid.

This is in small, white crystals which are soluble in 112 parts of water, less soluble in alcohol, and insoluble in chloroform and ether. It is used as a test (Ehrlich's) for typhoid fever.

Sulfosalicylic Acid. (Salicylsulfonic Acid.)

This is in white crystals readily soluble in alcohol or water. It is used as a test for albumin in urine.

Sulfosot.

This is chemically potassium-cresote-sulfonate. It is a brown, syrupy liquid, freely soluble in water. It is marketed

as a 10% syrup which is palatable, having no taste of creosote. The dose is 1 to 4 fluidrams.

Sulfogen.

This is stated to contain 75 grains of echinacea root, 5 grains of thuja, 10 grains of hydrated chloral, and 40 grains of magnesium sulfate to each fluidounce, with aromatics.

Sulfogenol.

This is a clear, syrupy liquid of a red brown color and a neutral reaction. It is soluble in water, alcohol or ether. It is a similar product to ichthyol, an oil being obtained from bituminous shale, which is then treated with sulfur.

Sulfur Compound Tablets.

(Formula of Q. C. Smith, M. D.)

These are put up by various firms. Each is stated to contain

Sulfur	gr. 5
Cream of tartar.....	gr. 2
Extract of ipecac.....	gr. 1/100
Extract of capsicum.....	gr. 1/500
Arsenous acid	gr. 1/1000
Calcium sulfid	gr. 1/8

Sometimes the calcium sulfid is replaced by 1/16 grain of sodium benzoate.

Sulphaminol. (Thio-oxy-diphenylamine.)

This is a pale yellow, odorless and tasteless powder, insoluble in water, soluble in alcohol or alkaline solutions. It is said to be a non-poisonous antiseptic recommended as a substitute for iodoform. The dose internally is 3 to 5 grains 3 times a day.

Sulphydrol.

This is stated to be an alkaline sulfur solution containing "sulphur (pure), grs. 1½," "iron (sulph.), grs. ¾," and "quinine (sulph.), grs. ¼."

Sulphoguaiacin.

This is chemically quinine sulfoguaiacolate. It is prepared by treating guaiacol with sulfuric acid to form guaiacol-sulfonic acid from which the barium salt is formed and then the quinine salt. The product is in small, yellow crystals,

soluble in water or alcohol. It is used in phthisis, intestinal catarrh, etc. The dose is 5 to 15 grains 3 times a day.

Sulphonol. (Diethylsulfondimethylmethane.)

This is a white, odorless and tasteless, crystalline powder. It is only sparingly soluble in water but is more freely soluble in alcohol, ether or chloroform. It is a hypnotic which seems to have no untoward effects. It is given in doses of 15 to 30 grains, which should be dissolved in some hot liquid such as tea, soup, milk, etc.

Sulphonethylmethane.

This is the U. S. P. name for Trional, which see.

Sulphonmethane.

This is the U. S. P. name for Sulphonol, which see.

Sulzbürger Fluss Tinktur.

This is stated (by Hager) to contain bitter and aromatic substances, including some aloes.

Sundheds Salt. (Health Salt.)

This is an old Danish proprietary article, which is now put up under these and other formulas:

I.

Sodium bicarbonate	parts 7
Sugar	parts 2
Magnesium carbonate	part 1

II.

Magnesium carbonate	part 1
Exsiccated magnesium sulfate	parts 2
Sodium bicarbonate	parts 50
Peppermint-oil sugar	parts 25

Suprarenal Liquid. (159)

This is an aqueous extract of suprarenal glands, preserved with 8/10% of chloretone. Each cc. of solution represents 1 g. of the fresh glands. The preparation is used in the undiluted form for spraying mucous membranes.

Suprarenalin. (14)

This is the active principle of the suprarenal gland. It is a finely crystalline, light yellow, odorless and slightly bitter substance. It is only slightly soluble in cold water or alcohol but readily soluble

in acids and fixed alkalies, insoluble in ether. It is seldom used in its undiluted state but mostly as the solution, ointment or triturates.

Suprarenalin Solution is stated to be a 1:1000 solution of suprarenalin sulfite in normal salt solution, free from other preservatives. It is used locally as a hemostatic and is given internally as a heart stimulant. Internally it is administered in doses of 5 to 30 minims every 2 or 3 hours, hypodermically 1 to 15 drops. Locally it is applied in strengths ranging from 1:15000 to 1:1000.

Suprarenalin Ointment contains 1/10% (1:1000) of suprarenalin dissolved in a petrolatum base. It is recommended for application to mucous membranes, such as the eye or nose. The action is said to be slower but more lasting than that of the solution.

Suprarenalin Triturates are tablets of suprarenalin, sugar and boric acid, weighing $\frac{1}{2}$ grain, containing such a proportion of suprarenalin that when a tablet is dissolved in 15 minims of water, a 1:1000 solution will be obtained. These are used for the extemporaneous preparation of the solution. It is marketed in vials containing 20 tablets.

Suprarenin.

This is a 1:1000 solution (in the form of chlorid) of the active principle of the suprarenal glands, which is made in Germany.

Suprarenin Borate.

This is put up in tablet form, each tablet containing .00013 g. suprarenin borate, .009 g. sodium chlorid, and .01 g. of cocaine. One tablet dissolved in 1 cc. of sterilized water yields a solution which is effective as an obtunder of pain in the extraction of teeth.

Surgeon's Antiseptic Oil.

This is stated to contain iodoform, glycerin, camphor, capsicum, carbolic acid, and stimulating liquids.

Svapnia.

This is a scale preparation of opium, described as containing "the anodyne

and soporific alkaloids codeia, narceia, and morphia; excludes the poisonous and convulsive alkaloids thebaine, narcotine and papaverine."

Sycese.

This is chemically orthobenzoic acid sulfimid, and is a purified form of saccharin which is official in the U. S. P. under the name benzosulphinide. It is a white, crystalline powder, sparingly soluble in water, readily soluble in alcohol or ether. It possesses a sweetness estimated as being 550 times that of sugar.

Symphorol. (Nasrol.)

This is the generic name of salts of caffeine-sulfonic acid. Sodium, lithium and strontium salts are employed, usually the first mentioned. They are bitter, crystalline compounds, slightly soluble in cold water. These compounds are used as diuretics, not affecting the vascular nervous system or blood pressure. Dose: 8 to 10 grains several times daily, in capsules.

Syrocolin.

This is the name given to a solution of potassium sulfoguaiacolate made in Basle, Switzerland.

Syrquin. (223)

This is described as an aromatic syrup of yerba santa recommended for disguising the bitter taste of quinine.

Syrup of Acid Glycerophosphates.

See Glycerophosphates Syrup and Tablets.

Syrup Antiepischesis. (192)

This is described as a combination of figs, cascara sagrada, and Alexandria senna.

Syrup Cannabis Compound.

Each fluidounce is stated to be equal to $7\frac{1}{2}$ grains of cannabis indica, $\frac{1}{3}$ grain of heroin hydrochlorid, 4 minims of chloroform, $7\frac{1}{2}$ grains of lobelia, $\frac{1}{8}$ grain of tartar emetic, 10% of alcohol, and aromatics.

Syrup Cocillana Compound. (159)

Each fluidram is stated to contain
 Tincture euphorbia piluli-
 feram. 15
 Syrup lactucariumm. 15
 Tincture cocillanam. 5
 Syrup squill compound....m. 3
 Cascaringr. 1
 Heroin hydrochloridgr. 1/2
 Mentholgr. 1/10

Syrup Codeine Co.

See Bell's Syrup Codeine Co.

Syrup Codeine Phosphate, Compound. (143)

Each fluidram is stated to contain
 Codeine phosphategr. 1/4
 Eucalyptusgr. 1/2
 Ipecacgr. 1/4
 Terpin hydrate, q. s. to saturate.

Syrup of Glycerophosphates.

See Glycerophosphates Syrup.

Syrup of Glycerophosphates, Compound Acid.

See Glycerophosphates Syrup and Tablets (Huxley's).

Syrup of Histosan.

See Histosan.

Syrup of Hypophosphite Comp.

See McArthur's Syrup of Hypophosphites Comp.

Syrup Iron Chloride(Weld.) (159)

Each fluidounce is stated to represent 40 drops of U. S. P. tincture of iron chlorid.

Syrup Lactopeptine with Phosphates. (Syr. Lactopept. Comp.)

Each fluidounce is stated to contain 32 grains of lactopeptine and 8 grains each of the phosphates of lime, iron, soda and potash.

Syrup Laxatans.

Each fluidram is stated to contain rhamnus frangula, 10 grains; cassia acutifolia, 10 grains; juglans cinerea, 10 grains; hyoscyamus niger, 2 grains, and aromatics, q. s.

Syrup Manganum Comp. (Syr. Mangani Comp.) (180)

This syrup is stated to contain 5 grains of the combined hypophosphites of manganese, lime, soda and iron, with

1/16 grain of quinine and 1/64 grain of strychnine to the fluidram.

Syrup Phospho-Chloride Iron (180)

Each dessertspoonful is stated to contain 10 drops of tincture of iron with phosphorus, glycerin, lime juice, and aromatics.

Syrup Phytolacca Comp. (212)

Each fluidounce is stated to contain
 Phytolacca decandragr. 48
 Stillingia sylvaticagr. 48
 Lappa majorgr. 48
 Corydalis formosagr. 48
 Cascara sagradagr. 16
 Xanthoxylum fraxineumgr. 16
 Potassium iodidgr. 16

Syrup Pinus Alba Comp.

See Pinus Alba Compound.

Syrup of Potassium Hypophosphite.

According to Hager, this is composed of

Potassium hypophosphite ...part 1
 Lime waterparts 6
 Waterparts 30
 Sugarparts 64
 Cochineal, to color light red.

Syrup Pulmonic Comp. Mills. (215)

Each fluidram is stated to contain
 Dover's powdergr. 2
 Ammonium muriate.....gr. 2
 Fluid extract sanguinaria....m. 2
 Sodium sulfategr. 10
 Cascara sagradagr. 10
 Syrup figs, to make.....fl.dr. 1

Syrupus Roborans.

This is stated to contain in each fluidounce 1 1/2 grains each of potassium and iron hypophosphites, 1 grain each of lime and manganese hypophosphites, 3/8 grain of quinine hypophosphite and 1/16 grain of strychnine hypophosphite.

Syrup Sanguinaria Comp. with Codeine and Terebene. (194)

Each fluidram is stated to contain 24 grains of wild cherry bark, 16 grains of white pine bark, 4 grains of blood root, 2 minims terebene, and 1 grain of codeine.

Syrup Seven Hypophosphites. (132)

Each fluidounce is stated to represent
 Calcium hypophosphitegr. 4
 Potassium hypophosphite ...gr. 4
 Iron hypophosphitegr. 2

Manganese hypophosphite ..gr. 1
 Quinine hypophosphitegr. 1
 Sodium hypophosphitegr. $\frac{1}{2}$
 Strychnine hypophosphite ...gr. $\frac{1}{16}$

Syrup Six Hypophosphites. (198)

Each fluidounce is stated to contain potassium and iron hypophosphites, each, $1\frac{1}{2}$ grains; lime and manganese hypophosphites, each, 1 grain; quinine hypophosphites, $\frac{7}{16}$ grain, and strychnine hypophosphite, $\frac{1}{16}$ grain.

Tabules and Taboids.

The first are gelatin capsules, the second gelatin globules, of "methylene blue compound" containing the methylene blue in the form of a tablet.

Taka-Diastase. (159)

This is a ferment obtained by the action of a fungus upon steamed rice. It occurs as a yellowish white powder which, like malt diastase, has the property of converting starch into sugar. It is incompatible with strong alcohol, alkalies and strong acids.

It is used to assist the functions of the stomach in amylaceous dyspepsia, the dose being 2 to 5 grains. It is also put up in tablet and liquid forms.

Tachiool. (Silver Fluorid.)

This is in yellow, deliquescent crystalline conglomerations, soluble in water, and darkening on exposure to light. It is a powerful antiseptic, at the same time being apparently much less toxic than other antiseptics. A solution of 1 in 150,000 was found to kill all pyogenic organisms in a minute; a solution of 1 in 200,000 was sufficient to kill typhoid bacilli in 1 minute; and a solution of 1 in 1000 was sufficient to kill anthrax spores in 20 or 30 minutes, after these had resisted steam for 15 minutes.

Tamar Indien.

According to the Repert. de Pharm., this is the composition: Tamarind pulp, 450, sugar, 40, sugar of milk, 60, glycerin, 50; mix, evaporate to syrupy consistence and add powdered senna leaves, 50, powdered anise, 10, essence of lemon, 3, tartaric acid, 3. After mixing, divide

the mass into troches, and roll these in a mixture of cream of tartar, 5, sugar, 35, sugar of milk, 35, tragacanth, 2, tartaric acid, 2, red saunders, 25. Finally dry the troches and wrap in tin foil.

Tanichthol Suppositories. (141)

These are put up in two forms, Nos. 1 and 2. No. 1 contain $\frac{1}{4}$ grain each of extracts of belladonna, witch hazel and stramonium, $\frac{3}{4}$ grain of phenol, 1 grain of ichthyol, $2\frac{1}{2}$ grains of tannic acid, and 1 grain of opium. No. 2 are the same except that they contain no opium.

Tannal.

Ordinary tannal is aluminum tannate, the soluble variety being aluminum tannotartrate. This is a yellowish white powder, soluble in 2 parts of water. It is used as an astringent, particularly for catarrhal troubles of the nose and throat, in the form of 1 to 5% solutions.

Tannalbin. (109)

This is a modified tannin albuminate, obtained by heating the latter, after precipitation, for 6 hours to 126° C. It is a yellowish, tasteless, odorless powder, containing 50% tannin, insoluble in water or alcohol.

It is used as an intestinal astringent in acute and chronic diarrheas, being without action on the mouth or stomach, and being gradually decomposed in the intestines into tannin and an inert albuminoid. Dose: 15 grains 2 to 4 times daily, usually in powders.

Tannalborin.

This is a grayish brown powder consisting of a compound of aluminium subgallate with 10% of sodium borate. It is a grayish brown powder, only sparingly soluble in water or alcohol, and used mainly in the treatment of the diarrhea of fowls and pigs. The dose is a teaspoonful to a tablespoonful.

Tannigen. (Diacetyltannin.)

This is a yellowish gray, slightly hygroscopic, odorless, tasteless powder, soluble in alcohol and in solutions of sodium phosphate, carbonate or borate,

slightly soluble in hot water and ether but insoluble in cold water. It is incompatible with acids and alkalis. It should not be exposed to heat and moisture. Used as an astringent in chronic diarrhea, dysentery, etc. It is not decomposed in the stomach but passes on to the intestines, where it is broken up by the alkaline fluid into its constituents. Dose: 3 to 8 grains 4 times per day.

Tannisol. (Methylditannin.)

This is a condensation product of formaldehyde and tannin. It is a reddish brown, odorless and tasteless powder, insoluble in water or ether, soluble in alcohol or weak alkaline or alkaline carbonate solutions. It is recommended in intestinal catarrh and severe diarrheas in doses of $7\frac{1}{2}$ grains and upwards. It is also used externally as a dusting powder and in ointments.

Tannobromine.

This is obtained by the action of formaldehyde upon dibromtannin. It is a reddish or yellowish gray powder containing 25% of bromin. It is only slightly soluble in water but dissolves freely in alkaline solutions. The aqueous solution is colored blue by the addition of iron chlorid. It is employed as a nerve sedative in place of alkali bromids.

Tannoform. (Methylenditannin.)
(130)

This is a condensation product of tannic acid and formaldehyde. It occurs as a voluminous reddish powder, odorless and tasteless, and is soluble in alkaline solutions but not in water.

It is a drying antiseptic in hyperidrosis, bromidrosis, soft chancre, ozena, etc. Used either in the undiluted state or a 25 to 50% solution. The dose internally is 4 to 8 grains for chronic intestinal catarrh.

Tannopine. (Tannone.)

This is a condensation product of tannin with hexamethylenetetramine. It is a fine, light, brownish, odorless, tasteless and non-hygroscopic powder containing 87% of tannin and 13% of hexamethy-

lenetetramine. It is insoluble in water, weak acids, alcohol, chloroform, or ether but slowly soluble in dilute alkalis. When ingested it passes the stomach unchanged but in the intestines is decomposed into its constituents, hence it is a valuable astringent and antiseptic for use in various intestinal disorders. Dose: 5 to 8 grains to 15 grains for adults, 4 times a day.

Tanosol. Creosote Tannate—Creosal.)

This is a dark brown, amorphous powder, very hygroscopic, and hence is sold in aqueous solution or in pills. The former contains 30 grains of tanosol and 20 grains of creosote in each fluidounce, while each of the pills contain 5 grains of tanosol and 3 grains of creosote.

This is recommended as an easily digestible compound of creosote. Like all creosote compounds, it is useful principally in tuberculosis of the lungs, bronchitis, etc. The usual dose of the solution is one tablespoonful 3 times daily.

Tannothymol.

This is the name given to a condensation product of formaldehyde, thymol and tannin. It is a white, tasteless powder, soluble in alcohol and alkaline solutions. It is recommended in cases of severe diarrhea in doses of $7\frac{1}{2}$ grains, repeated several times a day.

Tanphenyform. (212)

This is said to be a mixture composed of 63.9% of tannin albuminate (practically equivalent to 35 of tannin), 8.3% of hexamethylenetetramine, and 27.8% of salol. It is a moist, brown powder, of a slight aromatic odor and taste. It is used in various intestinal disorders in doses of 10 to 30 grains 3 to 5 times a day. It is supplied in the form of a powder, also in 5 and 10-grain capsules.

Tartarlithine.

This is described as an effervescent salt, the lithium analogue of cream of tartar (*i. e.*, it is lithium bitartrate), containing none of the additional alkaline salts common to the granular effervescent preparations.

Tebecin.

This is an antitubercular substance obtained by evaporating the blood coagula of immunized calves and horses on a water bath at not above 35° C. When evaporated to a doughy consistence it is then dried over sulfuric acid in a vacuum. It is given in doses of 4 g. daily.

Teething Necklaces.

According to Wittstein and others, these consist generally of strips of cotton cloth impregnated with sulfur and encased in a velvet covering, the whole made into the form of a narrow band which is to go around the child's neck. According to the manufacturers, these are supposed to act electrically or magnetically.

Tenaline.

This is a preparation of areca nut containing the alkaloids arecaine, arecaine and guvacine but not the poisonous principle arecoline. It is used as a vermifuge for dogs and cats; no cathartic is said to be necessary.

Terebene.

This is a mobile liquid of an odor similar to that of turpentine, sparingly soluble in water, readily in alcohol. Applied externally as an antiseptic for diverse wounds, with 20 parts of water, and for antiseptic inhalations in phthisis, bronchial catarrh, bronchorrhœa, and bronchitis. It may be utilized internally whenever turpentine is indicated. being much more agreeable than the latter. Dose: 4 to 6 drops, gradually increased, 3 times daily.

Teremorrhū.

This is described as a pleasant and palatable preparation of pure terebene and cod liver oil.

Terp-Heroin.

This is stated to contain 2 grains of terpin hydrate and 1/24 grain of heroin to the dram in a vehicle of prunus serotina and glycerin.

Terpinoids. (89)

These are gelatin pearls, each containing

Terpinol	m. 3
Eucalyptol	m. 1
Creosote	m. 1
Heroin	gr. 1/40

Terrol.

This is said to be a paraffin product which in warm weather is a viscid, yellowish oil, but in cold weather resembles white petrolatum. It is odorless and tasteless; it is used as an ointment vehicle.

Testaden. (109)

This is the powdered extract of the testicular juice of animals. It is used in impotency, neurasthenia and spinal irritation. The dose is 15 grains 3 or 4 times a day. It is supplied in the form of powder and as 4-grain tablets.

Testine.

This is described as the sterilized extract of the testes of the ram and the bull.

Teston.

This is a preparation made from the testicles of the ox

Tetraethylammonium Hydroxid.

This occurs in 10% solution, and is a colorless, alkaline, bitter liquid. It is a solvent of uric acid; used in rheumatism, gout, etc.

Dose: 10 to 20 minims 3 times daily, well diluted. When used by injection, the dose is 1 or 2 minims, 4 or 5 times daily.

Tetronal. Diethylsulfondiethylmethane.)

This is in colorless, crystalline scales, sparingly soluble in water and alcohol. It is used as a hypnotic in doses of 15 to 30 grains.

Thalline Sulfate.

This is in white needles or crystalline powder of a cumarin-like odor, very soluble in water. It turns brown on exposure to light. It is an antiseptic and

antipyretic, to be used in typhoid and malarial fevers, typhus, etc., in doses of 3 to 8 grains.

Theine.

This is the same as caffeine.

Theobromine.

This is a base occurring in *Theobroma cacao*, *Kola acuminata*, etc., but is now prepared synthetically; chemically it is dimethylxanthine. It is a white, crystalline, odorless and bitterish powder. It is almost insoluble in cold water or chloroform, but readily soluble in hot alcohol, or in ether. It forms salts with acids. Its uses are similar to caffeine but it does not act so powerfully on the central nervous system. It is recommended as a diuretic in dropsy, etc., but the great obstacle to its employment is its insolubility so that it is generally preferred in the form of some soluble compound. The dose is 5 to 8 grains.

Theobromine and Lithium Benzoate.

See Uropherin-B.

Theobromine and Lithium Salicylate.

See Uropherin-S.

Theobromine-Sodium Acetate.

See Agurin.

Theobromine-Sodium Citrate.

See Urocitral.

Theobromine-Sodium Salicylate.

See Diuretin.

Theocin. (Dimethylxanthine.)

This is chemically the same as theophyllin, the latter name being applied to the base when derived from tea, the former when prepared synthetically. It is also isomeric with theobromine. It is a white, odorless, bitterish, crystalline powder, moderately soluble in water, sparingly soluble in alcohol, sparingly in ether. It is a powerful diuretic in doses of 3 to 5 grains 2 or 3 times a day. It is recommended for cardiac affections, nephritis, dropsy, etc.

Theocine-Sodium Acetate. (Soluble Theocin.)

This is a readily soluble compound of sodium acetate and theocin-sodium. It

contains 60% of theocin, is soluble in 23 parts of water, is insoluble in alcohol and ether, and is a white crystalline powder. It has the diuretic properties of theocin combined with those of sodium acetate. It is more soluble and is therefore more readily absorbed and more readily tolerated than theocin. It is recommended in cardiac affections, nephritis, dropsy, etc., in doses of 3 to 5 grains 4 times daily.

Theocin-Sodium Salicylate.

This is an analogous to theocin-sodium acetate and is given in the same doses in renal affections.

Theolactine. (222)

This is a double salt of theobromine-sodium and sodium lactate, and forms a fine white powder, containing about 57% of theobromine. It is very soluble in water and its solutions have a bitterish and slightly alkaline taste. It must be protected against light and moisture. It is given in doses of 15 grains 3 or 4 times a day.

Theonacet.

This is another name for theobromine-sodium acetate, which see.

Theophyllin.

This is a base found in small amount in tea. It is prepared synthetically under the name theocin, which see.

Thephorin. (98)

This is a double salt of theobromine and sodium formate. It is a white powder, soluble in 10 parts of water. It contains 62½% of theobromine and is administered in the same manner and for the same purposes as diuretin.

Therapogen.

According to the Pharm. Ztg., this is a water-soluble compound of various terpenes with members of the naphthalin group. It forms an agreeably-odorless, oily, saponaceous liquid which is disinfectant and deodorant. In 3% solutions it is used as a wash for wounds.

Thermiol.

This is a 25% solution of sodium phenol-propiolate which is used in 1 to 3% solutions as an inhalant for diseases of the air passages.

Thermodin. (Phenacetin-Urethane.) (130)

This is in colorless, odorless and tasteless crystals. It is only very sparingly soluble in water. It is an analgesic, antipyretic and antiseptic. It is recommended as a mild and reliable antipyretic in typhoid fever, pneumonia, influenza, etc., in doses of 5 to 10 grains. The analgesic dose is 15 to 20 grains.

Thermol. (116)

This is described as acetsalicylphenetid. It is a white, odorless, tasteless, crystalline powder, sparingly soluble in water, readily soluble in alcohol. It is an antipyretic and analgesic in doses of 15 grains.

Thermol-Salicylate Comp. Tablets.

These are stated to contain thermol, colchicine, and salicylic acid.

Thermofuge. (159)

This is described as an antiphlogistic preparation composed of aluminium silicate, glycerin, boric acid, menthol, thymol, oil of eucalyptus, and ammonium iodid. It is applied externally for the reduction of inflammations.

Thial.

This is said to be chemically forminoxymethylsulfonate. It is a white, odorless powder, readily soluble in water. It is used as a vulnerary in $\frac{1}{2}$ to 1% solutions, as a wash and for irrigations in $\frac{1}{4}$ to $\frac{1}{2}$ % solutions, and for disinfecting cuspidors in 2% solutions.

Thiderol.

This is a syrup preparation containing 2% of guaiacol. It is used in pulmonary and laryngeal affections in doses of a teaspoonful 3 or 4 times a day.

Thieucalyptol.

This is another name for Sanosin, which see.

Thigenol. (98)

This is described as the sodium salt of a sulfonic acid of a synthetic sulfo oil, a soluble, odorless sulfur compound. It is a thick, nearly odorless liquid, soluble in water, alcohol and glycerin, and contains 10% of sulfur. It is used in skin and female diseases. Internally the dose is 3 to 10 grains 3 times daily.

Thilanin.

This is described as a sulfuretted wool fat containing 3% of sulfur. It is a brown-yellow unctuous substance used as an application for skin diseases.

Thiocol. (Potassium Guaiacol-Sulfonate.) (98)

This is prepared by heating guaiacol with concentrated sulfuric acid to a temperature not exceeding 80° C., converting the guaiacol-sulfonic acid produced into the barium salt, and this into the potassium salt. It is a colorless, crystalline powder, odorless, and having a faint bitter, followed by a sweet taste. It is soluble in about 8 parts of water; slightly soluble in alcohol, and insoluble in absolute alcohol, ether, or oils. It is said to be non-irritating to the mucous membrane of the stomach, therefore being well borne, and to be readily absorbed and assimilated, and is therefore preferred to creosote or guaiacol. It is recommended in pulmonary tuberculosis, acute and chronic bronchitis, whooping cough, etc., as a means of relieving expectoration and diminishing night-sweats. The dose is 5 to 20 grains 3 times a day. It is put up in 5-grain tablets or the powder may be dispensed in solution in orange syrup.

Thiocol Syrup.

See Sirolin.

Thiodine Suppositories. (159)

These are elastic vaginal suppositories stated to contain 10% of theodine which latter is described as being a combination of ichthyol, iodine, boroglyceride, hydrastine, carbolic acid, and glycerin.

Thioform. (Basic Bismuth Dithiosalicylate.)

This is a voluminous, insoluble, yellowish, odorless powder, insoluble in ordinary solvents, and containing 72% of bismuth oxid. It is recommended as a non-poisonous substitute for iodoform. When used internally the dose is 5 grains 3 times a day.

Thiol.

This occurs either as a brownish-black, thick liquid, or as a brownish-black powder, which is soluble in water and alcohol. It is used in the treatment of skin diseases, being recommended as a substitute for ichthyol. It is used in the form of ointment which contains 10 to 50%. The dry thiol, which is about $2\frac{1}{2}$ times the strength of the liquid, is mixed with starch and is used as a dusting powder.

Thiolan.

This is described as a mild sulfur ointment in which the sulfur is contained partly in a state of solution and partly in suspension. It is said to have proved effective in the treatment of some skin diseases.

Thioresorcin.

This is obtained by heating resorcin with sulfur. It is a yellowish-gray powder of a penetrating odor, insoluble in water, slightly soluble in alcohol and ether. It is an antiseptic which is used externally as a surgical dressing, either as a dusting powder or as an ointment.

Thiosinamine. (Allylsulfocarbamide—Allylthiourea—Rhodalline.) (178)

This is in colorless crystals of a slightly onion-like odor, very soluble in alcohol, water and ether, but water decomposes it.

It is used by hypodermic injection for lupus and uterine affections in doses of 3 minims in 15% alcoholic or 10% glycerinated solutions 2 or 3 times a week, the dose being gradually increased.

It is also used in phthisis and other tubercular diseases in doses of 1 to 3 grains.

Thomas' Eye Water.

Zinc sulfate.....	gr. 20
Sodium chlorid.....	gr. 20
Rose water.....	fl.oz. 1

—Parrish.

Three Chlorides(Henry.)

See Henry's Three Chlorides.

Thymacetin.

This is a thymol derivative analogous to phenetid. It is a white, crystalline powder, only slightly soluble in water, more soluble in alcohol and ether. It is used as a hypnotic and analgesic in headache, neuralgia, paralysis, insomnia, etc., in doses of 5 to 15 grains.

Thymenthol. (181)

This is an antiseptic which is stated to contain thymol, menthol, eucalyptol, methyl salicylate, boric and benzoic acids, and baptisia tinctoria.

Thymenthol Tablets.

These are stated to contain thymol, menthol, eucalyptol, oil of wintergreen, sodium benzoate, borate and bicarbonate.

Thymidol.

(Hesse & Goldstaub, Hamburg, Mfrs.)

This is described as methylpropylphenol menthol made of thymol and menthol. It is used in antiseptic mouth washes and tooth pastes.

Thyminic Acid.

See Soluröl.

Thymiodide. (211)

This is stated to be a combination of thymol iodid, bismuth subiodid and boric acid. It is an orange-colored, odorless powder which is recommended as an antiseptic surgical dressing.

Thymol Trichloracetate.

This is a compound of thymol and trichloroacetic acid. It is in colorless crystals or granular powder, insoluble in water; soluble in alcohol and ether. It is used as an antiseptic dressing for ulcers and wounds.

Thymoloform. (Thymoform.)

This is a condensation product of formaldehyde and thymol which forms a yellowish, tasteless powder, proposed as a substitute for iodoform.

Thymolyptol.

This is described as being a combination of $1\frac{1}{2}$ grains of eucalyptol, 2 grains each of resorcin, menthol, thymol, and benzoic acid, and 25 grains of "borosalicyl. acid."

Thymoseptic. (133)

This is described as containing the essential antiseptic and germicidal constituents of thyme, hamamelis virginica, eucalyptus, gaultheria, mentha arvensis, and baptisia, with 2 grains of "benzoboric acid" to each fluidram.

Thymotal. (Thymol Carbonate.)

This is a white powder of a faint odor of thymol, insoluble in water but soluble in alcohol, ether and chloroform. It is given internally to destroy tape worms, pin worms, etc., the dose for children being 8 to 15 grains, for adults 30 grains, 3 times daily. It is not decomposed into its constituents until it reaches the intestines.

Thymoxol.

This is a 1% alcoholic solution of thymol containing 3% of hydrogen peroxid. It is used in 5 or 10% dilutions as an antiseptic and bactericide.

Thyptol. (Liquor Eucalyptus Comp.) (221)

This is stated to represent the purified active principles of eucalyptus, mentha arvensis, thyme, gaultheria, and baptisia tinctoria with 12 grains of "benzoboric acid" to the fluidounce.

Thyraden. (109)

This is described as a dried extract of sheep's thyroids and therefore contains all the constituents of the gland. It is a brownish, nearly odorless powder used in myxœdema, obesity, goitre, rickets, etc., in doses of 15 to 30 grains daily.

Thyreoidectin. (159)

This is a reddish-brown powder prepared from the blood of sheep, goats or horses, chiefly sheep, from whom the thyroid glands have been removed. It is used as a remedy for exophthalmic goitre in doses of 5 to 10 grains 3 times a day. It is put up only in 5-grain capsules.

Thyroidin.

See Iodothyrene.

Thyroidinase.

This is described as a soluble ferment from the thyroid gland. It is a fine, white powder, soluble in water or glycerin, not in alcohol.

Thyro-Iodose.

See Nigridine.

Tinct. Passiflora.

See Daniel's Conct. Tinct. Passiflora.

Tissue Food. (138)

This is stated to be a combination of olive oil, port wine, iodine, phosphorus, and hypophosphites of lime and soda.

Tittmann's Purgative Pills.

Aloes	gr. 90
Jalap root.....	gr. 135
Soap	gr. 45
Anise	gr. 24
Alcohol to make a mass.	
Make 100 pills.—D.	

Tobias' Derby Condition Powder.

Tartar emetic.....	av.oz. 1
Sulfur	av.oz. 5
Potassium nitrate.....	av.oz. 5
Black antimony.....	av.oz. 10
Juniper berries.....	av.oz. 10
Fenugreek	av.oz. 20
—(Schædler's Analysis) in Hager.	

Tobias' Venetian Liniment.

Ammonia water.....	parts 5
Camphor	parts 2
Tincture of capsicum.....	parts 10
Alcohol	parts 20
Water	parts 10
—Hager.	

Tobias' Venetian Horse Liniment.

Ammonia water.....	parts 30
Camphor	parts 12
Tincture of capsicum.....	gr. 30
Alcohol	parts 200
Water	parts 60
(Schædler's Analysis) in Hager.	

Toluene. (Toluol.)

This is derived from coal tar. It is a colorless, refractive liquid, of a peculiar odor. It is only slightly soluble in water, very soluble in alcohol, ether or chloroform. It is used in the manufacture of dyes and artificial musk, also as a solvent, and is used as an ingredient of Lœffler's solution for application to diphtheritic membranes.

Tolypyrrine. (Tolyantipyrrine.)

This is in colorless crystals which are soluble in 10 parts of water, readily soluble in alcohol. It is recommended as an antipyretic, antirheumatic and antineuralgic, in doses of 10 to 30 grains.

Tolysal. (Tolypyrrine Salicylate.)

This occurs in colorless crystals, almost insoluble in water, readily soluble in alcohol. It is employed in acute and chronic rheumatism and rheumatic neuralgia, in doses of 15 to 30 grains.

Tongaline. (Liquor Tongæ Salicylatus.)

Each fluidram is stated to represent

Tonga	gr. 30
Ext. cimicifuga racemosa.....	gr. 2
Sodium salicylate.....	gr. 10
"Pilocarpin salicylate".....	gr. 1/100
"Colchicin salicylate".....	gr. 1/500

Tongaline Tablets.

Each 6-grain tablet is stated to contain 1 grain of "concentration of fluid tonga," 5 grains of sodium salicylate, $\frac{1}{8}$ grain of "cimicifugin salicylate," 1/200 grain of "pilocarpin salicylate" and 1/100 grain of "colchicin salicylate."

Tonic Aphrodisiac Tablets.

These are stated to contain phosphorus, ext. nux vomica, damiana, saw palmetto, and ext. coca.

Tonic Beef. (182a)

This is described by the manufacturers as containing "the nutritive constituents of beef wheat, and fresh eggs in a soluble, predigested and hence readily absorbable form."

Tonic Hypophosphites. (182a)

Each fluidounce is stated to contain $1\frac{1}{2}$ grain each of potassium and iron

hypophosphites, 1 grain of manganese hypophosphite, $\frac{1}{2}$ grain of quinine hypophosphite and 1/16 grain of strychnine hypophosphite.

Tonic Phosphate.

Each teaspoonful is stated to contain 2 grains of iron pyrophosphate, $\frac{1}{2}$ grain of extract of nux vomica, 1/100 grain of phosphorus, and aromatics, q. s.

Tono Nervine Tablets. (212)

Each one is stated to contain ferri carb., gr. 1, ext. damiana, gr. 1, ext. sumbul, gr. $\frac{1}{2}$, asafetida, gr. $\frac{1}{2}$, phosphorus, gr. 1/100.

Tono Sumbul. (212)

This is stated to contain sumbul, iron, calisaya, phosphoric acid, sherry wine and aromatics.

Tonols. (178)

This is the name given to identify this particular brand of glycerophosphates.

Toril.

This is described as a solid, soluble extract of meat, including all the albuminoids.

Traumatizin.

What is sold under this name is a solution of gutta percha in chloroform. It is a brownish colored liquid which is used like collodion and for the same purpose, a covering and protective for wounds.

Traumatol.

See Cresol Iodid.

Triacol. (Elixir Guaiacol Co.)

Each dessertspoonful is stated to contain

Potassacol	gr. $2\frac{1}{2}$
Sodacol	gr. $2\frac{1}{2}$
Terpin hydrate.....	gr. 2
Morphacol	gr. $\frac{1}{8}$
Benzoin and aromatics, q. s.	
Sugar of glucose.....	none

Potassacol, sodacol and morphacol are the potassium, sodium and ethylmorphine salts of guaiacol-sulfonic acid.

Triberane.

This is a French purgative mixture said to contain alcoholic extract of sena, glycyrrhiza 20, sugar 20, precipitated sulfur 10, and vanillin, to flavor.

Trichloracetic Acid.

This is a deliquescent crystal, melting at 52° C., and is very soluble in water, alcohol and ether. It is used as an escharotic for destroying warts, nævi, corns, etc., as an astringent for gonorrhea, indolent ulcers, etc., and as a test for albumin in urine.

Trichophytin.

This is a liquid filtrate obtained from cultures of trichophyta, the fungi which destroy the hair cells. This liquid has been sterilized and then preserved with ¼% of phenol. It is used for some diseases of the hair and scalp.

Tri-Ferment Comp.

The powder is stated to contain pure pepsin, pancreatin, diastase, lactic acid, and hydrochloric acid. It is also put up in the form of 5-grain tablets and elixir.

Triferrin. (Iron Paranucleinate.) (109)

This is prepared by digesting cow's milk casein with pepsin and precipitating the solution with a ferric salt. It is a tasteless powder, soluble in a weak solution of sodium hydroxid, but insoluble in weak hydrochloric acid. It contains 22% of iron, 9% of nitrogen, and 2½% of phosphorus in natural (organic) combination. In addition to its hematinic action derived from iron, it is also claimed to act like lecithin on account of the phosphorus in organic combination it contains. It is said to agree with the most sensitive stomach since it passes the stomach unchanged but is freely absorbed in the intestines. It is recommended in anemia, chlorosis, neurasthenia, general debility, etc. The dose is 5 grains 3 times per day.

Triferrol. (109)

This is an elixir of triferrin said to contain 1 grain of triferrin in 1 fluidram. The triferrin is dissolved in a vehicle consisting of water, alcohol, tincture of orange, compound tincture of cardamon and vanillin. It contains 15% of alcohol. It was introduced as a

convenient substitute for triferrin. The dose is a tablespoonful 3 times a day.

Trigemin.

This is a compound resulting from the action of butylchloral upon pyramidon. It is in long, colorless needles which are freely soluble in water, yielding a solution of a faintly aromatic odor and taste. It turns yellowish or brownish on exposure and then is no longer fit for use. It is used for various headaches and neuralgias in doses of 8 to 15 grains 3 times daily.

Trikresol. (178)

This is a liquid said to consist of 35% of orthocresol, 40% of metacresol, and 25% of paracresol. It is therefore similar to cresol, U. S. P. It is readily soluble in alcohol, ether or fixed oils, only soluble to the extent of 2% in water, but stronger than ½ to 1% solutions are never required. It is used as an antiseptic like phenol but is much stronger. The internal dose is 1 or 2 minims 3 times a day.

Trikresolamine.

See Kresamine.

Trinitrin.

This is a synonym for nitroglycerin.

Trional. (Diethylsulfonethylmethylmethane — Sulphonethylmethane, U. S. P.)

This is in colorless, lustrous scales, odorless and of a bitterish taste. It is soluble in 195 parts of water at 25° C., more readily soluble in boiling water, alcohol or ether. It is prescribed as a hypnotic and nerve sedative in 15-grain doses, which are best given in hot drinks.

Triosine.

This is described as a combination of the desirable principles of triticum and pelosine with saline and herbal diuretics. It is recommended for nephritis.

Triotonol. (178)

Tablets containing 2½ grains each of calcium and sodium glycerophosphate and 1/60 grain of strychnine glycerophosphate. The dose is 1 or 2 tablets 3 times a day.

Tripartol. (76)

This is described as a white, fluid product of petroleum combined with benzoin, phenol, thymol, menthol and eucalyptol.

Trioxymethylene.

See Paraform.

Triphenin. (130)

This differs from phenacetin in that acetic acid has been replaced by propionic acid. It is a white, shining, crystalline, odorless, faintly bitter powder. It requires about 2000 parts of water for solution, but is freely soluble in alcohol or ether. It is recommended as an antipyretic in typhoid fever, pneumonia, pleurisy, influenza, etc., in doses of 4 to 10 grains 3 or 4 times daily, as an analgesic in neuralgia, sciatica, migraine, etc., in doses of 15 or 20 grains.

Tritica. (181)

This is described as a concentrated infusion of the rhizome of triticum.

Tritipalm. (187)

This is a preparation each teaspoonful of which is stated to represent 30 grains of fresh saw palmetto and 60 grains of triticum repens.

Tritols. (Oil Triturates.)

These are preparations patented in Germany which consist of emulsions of various drugs with extract of malt. Among some of the combinations are cod liver and castor oils and oleoresin of male fern.

Tropacocaine Hydrochlorid. (Benzoylpseudotropine Hydrochlorid.)

This is an alkaloidal salt from the Java coca plant, but is also prepared synthetically from tropinon or tropine by electrolytic reduction. It is readily soluble in water.

It is used as a substitute for cocaine; it is said to be less toxic, less depressing on the heart, more prompt, and to yield more stable solutions. It is used in 3 to 10% solutions, preferably in a 0.6% solution of sodium chlorid.

Trophonine. (167)

This is stated to contain egg-albumen, beef and wheat, partially digested, with which are combined the enzymes of all the digestive organs, and nuclein from the lymphoid glands. It is described as a saturated solution of nucleoalbumins and nucleoproteids and also containing nucleo-enzymes.

Tropon.

This is an imported nutritive which is stated to contain 90% pure albumen.

Trousseau's Arsenical Cigarettes.

One part of sodium arsenate is dissolved in 50 parts of water and bibulous paper is saturated with this solution, rolled into cigarettes, and allowed to dry. Each cigarette should contain 5 centigrams of sodium arsenate.

Trousseau's Diuretic Wine.

Digitalis	gr. 90
Potassium acetate	gr. 135
Juniper berries	av.oz. 1
White wine	fl.oz. 16

Reduce the digitalis and juniper to coarse powder, macerate in the wine for 4 days, strain, and in the liquid dissolve the salt.—Bouchardat's Formulaire.

Trygase. (172)

This is stated to be a chemically pure yeast, forming a light gray powder, insoluble in water, and having the odor and taste of yeast. It is intended for use like other yeast preparations.

Trypsin. (14)

This is the proteolytic ferment of the pancreas and is prepared from the fresh pancreas of hogs. It is a light yellow powder, possessing a faint odor and a meat-like taste. It is not completely soluble in water at once but dissolves almost entirely in time. It is insoluble in alcohol or ether. It is decomposed at temperatures above 105° F. It has the power of digesting proteid materials; it acts best at 104° F. and in a slightly alkaline medium. When applied locally in solutions made alkaline with sodium carbonate it dissolves diphtheritic and other false membranes. It is claimed to

have the power of destroying the cells of cancer without acting on the healthy tissue. It is applied locally by means of a brush or spray. About 6 grains are to be mixed with 2 grains of sodium bicarbonate and triturated in a mortar while adding 1 or 2 drams of distilled water, then warmed to 38 to 40° C. and applied immediately. The application may be repeated several times an hour if necessary, a fresh solution being made before each application. The internal dose is 2 grains or more 3 times a day.

Trypsin Glycerole.

This is a 70% glycerin solution containing approximately 5% of trypsin powder. It is a yellowish or brownish clear liquid of sweetish taste and peculiar characteristic odor. It should be kept in a cool place. It is intended for internal and hypodermic use in the treatment of cancer. The dose internally is 1 to 2 fluidrams 3 times a day; hypodermically, 5 minims every other day, gradually increased.

Trypsogen.

These are tablets stated to contain the enzymes of the islands of Langerhans with the tryptic and amylolytic ferments of the pancreas, 1/100 grain of gold bromid and 1/200 grain of arsenic bromid. They are of a light brown color, a faint odor and a sweetish taste. It is claimed to be of special value in diabetes and glycosuria, also said to be of value in anemia, chlorosis, chorea and neurasthenia.

Tuberculin. (Paratoloid.)

This is a sterilized glycerin extract of pure cultures of the tubercle bacillus as introduced by Dr. Robert Koch. It is a transparent, light-brown liquid which is now mainly employed as a diagnostic agent against suspected tuberculosis, Koch himself having abandoned its use for curing the disease. It is injected under the skin, a few minims at a time, and observing if the injection is fol-

lowed or not by specific and characteristic symptoms. It is now used mainly to detect tuberculous taint in cattle.

Tuberculocidin.

This is a pulverulent substance derived by Prof. Klebs from Koch's tuberculin by eliminating certain toxic bodies and leaving in solution an albumose, which thereupon is precipitated by alcohol. It is believed to represent the beneficial properties of crude tubereulin. It is much less dangerous than Koch's lymph. Klebs having administered as much as 1 cc. to tuberculous patients. The dose hypodermically 1/20 to 1/10 grain to begin with, rising rapidly.

Tuklin.

This is stated to be an acidified mixture of formalin, alcohol and ether, flavored with aromatic essential oils. It is intended for use as an antiseptic inhalant in treatment of diseases of the air passages.

Tulase.

This is a preparation made by Behring which is stated to contain all the constituents of Koch's bacillus. It is recommended as a cure for tuberculosis.

Tumenol Paste. (Tumenol Venale.)

This is a crude mixture of variable proportions of tumenol sulfone and tumenol sulfonic acid derived from bituminous shale. It is a dark, reddish-brown oil of syrupy consistence, almost insoluble in water but easily soluble in fats, ether or benzol. It is recommended in eczema, superficial ulcerations, excoriations, burns, etc., as a palliative and protective covering. It is used in 5 to 20% ointment or a 10% mixture with water or glycerin.

Tumenol-Ammonium.

This is the ammonium salt of tumenol-sulfonic acid. It is a dark, oily substance of a faint tarry odor and acrid taste. It is soluble in water in all proportions, also soluble in alcohol, ether or glycerin. It is applied as a local dressing in the form of a 5 to 10% aqueous

solution, a 5 to 10% tincture containing equal parts of ether, alcohol and water or glycerin, or a 5 to 20% ointment.

Tumenol Oil. (Tumenol Sulfone.)

This is a mixture of the sulfonated constituents of tumenol venale which are non-combinable with alkali. It is a dark, thick, oily liquid, but easily soluble in ether. It is used for the same purposes as the preceding.

Tumenol Powder. (Tumenol-Sulfonic Acid.)

This consists of the sulfonated constituents of tumenol venale, capable of combining with caustic alkalies. It is a dark-colored powder, sparingly soluble in cold water but readily soluble in hot water and in dilute ammonia water. It is used for skin diseases as are the other tumenol preparations. It is used in substance, finely powdered, or as a 5 to 10% paste with or without zinc oxid.

Turck's Compound Emulsion.

This is stated to be made with predigested cod liver and fruit oils.

Turicin.

This is stated to be a compound of tannin and gluten. It is a fine, tasteless, inodorous, flesh-colored powder, insoluble in water but soluble in dilute alkalies, and containing 21% of tannin. It is used in the diarrheas of adults. When taken internally it is not decomposed until it reaches the intestines. The dose is 10 to 30 grains.

Tussiculin.

This is a cough remedy stated to be prepared from 3½ g. each of the volatile oils of *melaleuca leucodendron*, *serpyllum*, *persica vulg.* and 45 g. of tincture of alkanet.—Phar. Centralh.

Tussol. (Antipyrin Mandelate.)

This is a white, crystalline, bitter powder. It is soluble in 15 parts of water, 3 or 4 parts of alcohol and 25 of ether. It is decomposed by milk, milk food and alkalies. It has been extolled for the treatment of whooping cough. The dose is ½ to 8 grains according to age.

Tutulin.

This is a vegetable albumin. It is a fine yellowish-white powder, without odor or taste, and intended as a food in the dietetic treatment of typhoid fever and other cases where it is found difficult to give a nourishing diet.

Tyalid.

This is described as a combination of ptyalin, pancreatin and malt diastase. It is marketed in the form of powder, tablets and elixir.

Tyndale's Compound Syrup of Eucalyptus.

This is stated to contain *Eucalyptus globulus*, *Eucalyptus resinifera*, horehound herb, elecampane root, licorice root, and comfrey root. There are two forms, Nos. 1 and 2, the former containing 2 grains of ammonium chlorid to the fluidram, the latter 1/32 grain of morphine acetate to the fluidram.

Tyree's Antiseptic Powder.

Formula as published by the manufacturer, in parts: Sodium borate, 50; alum, 50; carbolic acid, 5; glycerin, 5; the crystallized principles of thyme, 5, eucalyptus, 5, gaultheria, 5, mentha, 5.

Tyree's Buchu and Hyoscyamus Comp.

Each dessertspoonful is stated to contain 10 grains of buchu, 5 grains each of *uva ursi*, *pareira*, *hyoscyamus* and hops, 10 grains of potassium acetate and 15 drops of "ætherial (!) spirits of nitre."

Tyree's Hypophosphite Powder Comp.

See Hypophosphite Powder Comp.

Ulmarine.

This is a mixture of salicylic acid esters of aliphatic alcohol containing 75% of salicylic acid. It is a reddish-brown, neutral or slightly acid fluid, with a weak pleasant odor and burning taste. It is insoluble in water but soluble in 2 parts of alcohol. It has been used in articular rheumatism and similar affections, applied like methyl salicylate in the form of applications with a brush, followed by packing with cotton.

Ulyptol.

See Eulyptol.

Unada.

This is an effervescent laxative tablet which is stated to contain magnesium sulfate, sodium phosphate, sodium bicarbonate, lithium carbonate, and quinine bisulfate.

Unger's Cure for Drunkenness.

Dr. Unger's cure for drunkenness was loudly vaunted about 20 years ago, but its uselessness was subsequently proved. As it is still occasionally asked for, it is here given:

Take 1 pound of best, fresh, quill red Peruvian bark, powder it, and soak it in 1 pint of diluted alcohol. Afterward strain and evaporate it down to half a pint. Dose: A teaspoonful every 3 hours the first and second day, and occasionally moisten the tongue between the doses. It acts like quinine, and the patient can tell by a headache if he is getting too much. The third day take as previous, but reduce the dose to $\frac{1}{2}$ teaspoonful. Afterward reduce the dose to 15 drops, and then down to 10, and then down to five drops. To make a cure, it takes from 5 to 15 days, and extreme cases 30 days. Seven days are about the average in which a cure was said to be effected.—Pharm.

Ungrol.

This is a glycerogelatin preparation medicated with sublamín, intended for the treatment of gonorrhea and syphilis. It is supplied in tin tubes, accompanied by a canula for the introduction of the remedy.

Unguentine. (148)

The formula given is: Carbolic acid, 2%; ichthyol, 5%; alum, 15 to 16%, the vehicle being petrolatum. The manufacturers state that "by a process of our own we eliminate most of the astringent properties of the alum, thus rendering it non-irritable in this large amount."

It is a fact, however, that the astringency of alum is an inherent property.

Unguentine Cones.

These are rectal suppositories stated to contain "alum (non-irritating)," ergotin, menthol, ichthyol, extracts of opium and belladonna, carbolic acid, and cocoa butter.

Unguentine Crayons.

These are urethral bougies said to contain corrosive sublimate, 1/200 gr., morphine, 1/12 gr., zinc sulfocarbolate, 1/16 gr., "alum (non-irritating)," $\frac{1}{8}$ gr., powdered golden seal, 1/16 gr., protargol, 1/10 gr., and cocoa butter.

Unguentine Pencils.

These are intra-uterine bougies each said to contain corrosive sublimate, 1/100 gr., zinc sulfocarbolate, $\frac{3}{8}$ gr., "alum (non-irritating)," 1 $\frac{1}{2}$ gr., ichthyol, 2 gr., powdered golden seal, $\frac{1}{4}$ gr., protargol, $\frac{1}{8}$ gr., and cocoa butter, q. s.

Unguentine Pessaries.

These are vaginal suppositories which are stated to contain "alum (non-irritating)," carbolic acid, ichthyol and a glycerogelatin vehicle.

The No. 4 pessaries are stated to contain "alum comp. (non-irritating)," 10 gr., ichthyol, 2 gr., phenol, 2 gr., boric acid, 15 gr., aromatic antiseptic ols, and a glycerogelatin vehicle.

Unguentum Crede.

See Collargol Ointment.

Ungt Betulæ Comp.

This is stated to be composed of oil of birch tar (Russian), salicylic acid, and diachylon plaster.

Uralium. (Uraline—Chloral-Urethane.)

This is a white powder, insoluble in cold water, decomposed by hot water, soluble in alcohol and ether. It is used as a hypnotic in doses of 15 to 45 grains, and is supposed to be superior to chloral.

Uranium Nitrate.

This is in yellow crystals, soluble in water, alcohol, or ether. It is recommended for diabetes but does not diminish the elimination of sugar. The dose is 1 or 2 grains 3 times daily, the dose

being gradually increased to 15 grains. Uranium salts, made into plaster, are recommended as application to lupus.

Urasol. (116)

This is a condensation product of acetic and salicylic acids and formaldehyde. It is in very fine crystals which are soluble in ether or alcohol but insoluble in water. It is used as a uric acid solvent and for uric acid poisoning, and in the treatment of rheumatism, gout, pneumonia, influenza, typhoid fever, scarlet fever, etc., in doses of 5 to 8 grains.

Urea. (Carbamide.)

This is a constituent of urine but is formed artificially by heating ammonium cyanate. It is in white crystals which are soluble in water or alcohol. It is used as a diuretic in renal calculus, also an antitubercular. The dose is 10 to 20 grains in water 3 or 4 times a day.

Urethane. (Ethyl Urethane—Ethyl Carbamate.)

This is an ester of carbamic acid obtained by the action of alcohol on urea. It is in colorless, odorless crystals, having a saline taste. It is very soluble in water and other solvents, and is decomposed by acids and alkalis. It is used as a hypnotic but it has no direct analgesic influence, and hence has never become popular. The dose is 15 to 45 grains. It is recognized by the U. S. P.

Urgosan. (172)

This is put up in gelatin capsules, each one containing 5 grains of gonosan and $2\frac{1}{2}$ grains of hexamethylenetetramine. It is used in the treatment of inflammation of the bladder, following gonorrheal infection of the urinary tract.

Uric Solvent, Hayden's. (145)

This is stated to represent *Althæa officinalis*, *Epigæa repens*, *Iris versicolor*, *Juniperus communis*, *Polytrichum juniperus*, lithium citrate, sodium acetate, and potassium nitrate.

Uricsol.

This is stated to be a concentrated solution of lithium citrate and sodium phosphate.

Uriform. (179)

Each 2 fluidrams is stated to contain
Hexamethylenetetraminegr. $7\frac{1}{2}$
Saw palmettogr. 5
Santalgr. $2\frac{1}{2}$
Damianagr. $2\frac{1}{2}$
Cocagr. $2\frac{1}{2}$
Nux vomicagr. $\frac{1}{4}$

In a menstruum containing 20% of alcohol with sugar and aromatics.

Uriseptin. (79)

This is described as a solution of hexamethylenetetramine with lithia and containing fluid extracts of couch grass and corn silk. The manufacturers state that lithium oxid and formaldehyde are in combination, the mixture representing 26.77 grains per fluidounce.

Uritone. (159)

This is the same as Hexamethylenetetramine, which see.

Urocitral. (175)

This is stated to be chemically theobromine sodium citrate, a white powder, readily soluble in warm water, and containing 40% of theobromine. It is used as a diuretic in doses $7\frac{1}{2}$ to 15 grains several times a day.

Urol.

This is the name for quinate of urea. It is in white crystals, readily soluble in water or alcohol. It is used for gout and gravel in doses of 10 to 30 grains.

Urocol.

These are tablets each containing $\frac{1}{2}$ g. of urol, $\frac{1}{2}$ g. of milk sugar, and 1 mg. of colchicin. These are used to cut short acute attacks of gout, 4 or 5 being generally sufficient.

Uroformin. (63)

This is stated to be hexamethylenetetramine. It is marketed in the form of powder and as 5-grain tablets.

Uroformin Comp. Elixir.

See Elixir Uroformin Comp.

Urolysin.

This is stated to be a mixture of citrozon with 10% of quinic acid. See Citrozon. It is used as a remedy for gout.

Uropherin-B. (Theobromine and Lithium Benzoate.) (130)

This is a double salt of theobromine-lithium and lithium benzoate. It is a white powder containing 50% of theobromine, and soluble in 5 parts of water. It is decomposed on exposure to light and air. It is a diuretic recommended for dropsy and diseases of the heart and genitourinary organs. The dose is 5 to 15 grains.

Uropherin-S. (Theobromine and Lithium Salicylate.) (130)

This is a double salt of theobromine-lithium and lithium salicylate. Properties, uses and dose are the same as those of uropherin-B.

Uropurgol.

This is another name for Urotropine-New, which see.

Uropurin.

This is a dry extract of uva ursi leaves which is supplied commercially in the form of compressed tablets, each of which is stated to contain $\frac{1}{4}$ gr. of the dried extract.

Urosine. (Lithium Quinate.)

This is in colorless, odorless crystals of a saline taste, readily soluble in water, sparingly in alcohol and insoluble in chloroform and ether. It is recommended for gout, stone in the bladder, cystitis, and uric acid diathesis. It is supplied in the form of powder or as effervescent tablets each containing quinic acid, $7\frac{1}{2}$ gr., lithium carbonate, $1\frac{1}{2}$ gr., and sugar, $4\frac{1}{2}$ gr.

Urotropine.

This is the same as Hexamethylenetetramine, which see.

Urotropin-New. (Urotropin Methylenecitrate.)

See Hexamethylenetetramine methylenecitrate. The dose is 15 grains 3 times a day.

Urotropin Quinate.

See Chinotropin.

Urotropin Tannate.

See Tannopine.

Ursin.

This is a compound of quinic acid and lithium. See Urosin.

Urystamine. (185)

This is stated to be chemically hexamethylenetetramine lithium-zenzoate. It is soluble in water, and is recommended for gout, rheumatism, vesical and urethral catarrh, and as a urinary antiseptic in doses of 15 grains.

Ustadine. (177)

This is stated to contain the active principle of *Ustilago maydis*, *nux vomica*, and aromatic extracts.

Uterine Tonic Sedative.

See Elixir Viburnum and Hydrastis Comp.

Uterine Tonic Cordial. (182a)

Each fluidounce is stated to contain 60 grains each of black haw and golden seal and 30 grains of Jamaica dogwood.

Uterol.

This is now known as Utros, which see.

Uterotonic Compound. (143)

Each fluidounce is stated to contain

Squaw vine	gr. 40
Black haw	gr. 40
Jamaica dogwood	gr. 30
Golden seal	gr. 20
Black cohosh	gr. 20
Cascara sagrada	gr. 10
Henbane	gr. 4
Potassium bromid	gr. 10

Utonia. (173)

This is described as a preparation of mitchella, helonias, senecio, aletris and cimicifuga.

Utros. (Elixir Viburnum Comp.) (141)

Each fluidounce is stated to represent

Cramp bark	gr. 30
Hydrastis	gr. 30
Black haw	gr. 20
Aletris	gr. 15
Squaw vine	gr. 15
Blue cohosh	gr. 15
Cascara sagrada	gr. 15
Somnos	m. 120

Vaginal Wafers. (138)

Each is stated to contain

Salicylic acid	gr. 1
Tannic acid	gr. 2
Boric acid	gr. 3
Extract of opium	gr. $\frac{1}{4}$
Extract of helonias.....	gr. $\frac{1}{2}$
Extract of henbane.....	gr. 1
With thymol, eucalyptol and alum.	

Vaginoids. (141)

These are vaginal suppositories, each one of which is stated to contain

Phenol	gr. 2
Ichthyol	gr. $1\frac{3}{4}$
Zinc sulfocarbolate	gr. 1
Iodin	gr. $\frac{1}{2}$
Boroglyceride and gelatin, q. s.	

Vagipos. (84)

This is stated to contain menthol, thymol, iodine, hydrastis, one of the newer anesthetics, with gelatin and boroglyceride.

Validol. (222)

This is the menthyl ester of valerianic acid with 30% of free menthol. It is a clear, colorless liquid, of a mild, pleasant odor, insoluble in water, readily soluble in alcohol, ether, chloroform, and oils, and is decomposed by alkalis. It is an analeptic, antihysterical, carminative and stomachic, and is recommended in hysteria, migraine, gastralgia, gastritis, vomiting of pregnancy, and all reflex neuroses, and is said to be a specific against seasickness. It is said to be well borne by the most sensitive stomach. The dose is 10 to 15 drops on a little sugar or in a little sweet wine, 3 times a day.

Validol, Camphorated.

This is validol with 10% of camphor dissolved in it. It is recommended in serious cases of exhaustion, where the administration of camphor is indicated; in odontalgia, either by application to the pulp or inserted on cotton into the previously cleansed cavity. The dose is 10 to 15 drops.

Valofen. (96)

This is a patented liquid preparation intended to replace recently prepared in-

fusions of valerian. It is stated to contain ethyl valerate, ammonium valerate, and the active constituents of peppermint. The dose is 10 to 25 drops.

Valyl.

This is the diethylamid of valerianic acid. It is a colorless, neutral liquid, of a pepper-like odor and a burning taste. It is soluble in 25 parts of water and is easily soluble in alcohol or ether. It should not be exposed to the air. It acts as a sedative, antispasmodic and nervine, similar to valerian, and is recommended in hysteria, hemicrania, neuralgia, insomnia due to nervousness, etc. Owing to its liability to oxidize when exposed to the air, it is supplied only in the form of gelatin capsules, each containing 2 grains, the dose being 2 or 3 capsules, best given during or immediately after meals.

Van's Mexican Hair Restorative.

The composition of this is given thus by the manufacturers: Glycerin, cactus, salt, vinegar, extracts from several Mexican roots and flowers, alcohol and perfume.

According to a testimonial from Dr. F. L. James, he qualitatively analyzed the mixture and found neither lead nor other harmful mineral.

Vanier's Iodized Syrup Quinine.

This is stated to have this composition:

Potassium iodid	g. 3
Fluid ext. cinchona.....	g. 25
Fl. ext. of bitter orange peel..	g. 5
Fluid extract of walnut.....	g. 50
Alcohol, 30%	g. 17
Simple syrup	g. 900

Varalettes. (25)

These are effervescent salts put up in the form of compressed tablets. Various substances are put up in this form, such as antipyrine, antipyrine and caffeine, sodium bromid, lithium citrate, caffeine, etc.

Vaseline Emulsion. (39)

This is stated to be a combination of vaseline, glycerin, hypophosphites of lime and soda, and certain food products.

Vasanol.

This is an ointment vehicle prepared by mixing petrolatum and fatty alcohols derived from wax, spermaceti and lanolin. It is said to have the property of taking up considerable water. It is put up as a soft ointment, a powder and a liquid.

Vasogen. (161)

This is described as an oxygenated hydrocarbon which has the power of rendering many other substances mixed with it soluble in or emulsifiable by water. It is put up in various combinations, such as iodine, 6 and 10%, guaiacol, sulfur, tar, mercury, menthol, iodoform, etc., all of which are to be applied externally.

Vasopolentum. (175)

This is the name applied to an olein-paraffin mixture which in the solid form is intended as an ointment vehicle and in the liquid form as a solvent for iodine and other substances intended for external application.

Vera Diastase. (187)

This is a diastasic ferment obtained from the pancreatic gland of the pig. It is a light yellowish-white powder, having a faint odor and a somewhat mucilaginous taste. It is not entirely soluble in water but the diastasic principle is, however, completely soluble so that its solutions may be filtered without loss of activity. It is incompatible with strong alcohol, alkalies, acids, and other substances incompatible with ferments. It is claimed to digest 150 times its weight of starch in 10 minutes, under proper conditions. It is recommended as a digestant of starchy food in amylose dyspepsia in doses of 2 grains or more. It is marketed in the form of powder, 2-grain tablets, and as essence, which see.

Vera Diastase Essence.

This is a liquid containing 2 grains of vera diastase to each fluidounce, in a menstruum containing 14% of alcohol, 12½% of glycerin, and flavoring matters. The dose is a teaspoonful.

Veracolate.

This is a combination of bile acids with extract of cascara, which is marketed in tablet form.

Veratrol.

This is the dimethylether of pyrocatechin. It is a clear liquid, insoluble in water but soluble in ether, alcohol and fixed oils. It is used externally as an application in intercostal neuralgia and internally against pulmonary tuberculosis instead of guaiacol. The dose is 2 drops 3 times a day.

Veratrone. (159)

This is described as a non-alcoholic, physiologically standardized preparation of veratrum viride of one-fourth the strength of the fluid extract. It is suitable either for internal or hypodermic administration. The dose is 15 to 30 minims orally or 10 to 15 minims hypodermatically.

Vermifugin. (85)

This is stated to be composed of jalap, santonin, scammony resin, calomel and sugar.

Vereform Antiseptic. (203)

This is a yellowish liquid described as a solution of soap containing 6% of formaldehyde gas. It is practically neutral, is miscible with water in all proportions, and is incompatible with alkaline earths, heavy metals and acids. It is approximately one-sixth the strength of the U. S. P. solution of formaldehyde. A solution containing 1.6% is said to be equal in antiseptic value to a 1 in 1000 solution of mercuric chlorid. A solution containing 1% or over is used for sterilization of the hands and of the field of operation.

Veroform Germicide.

This is a yellowish liquid described as a solution of soap containing 20% of formaldehyde. It has properties, etc., similar to veroform antiseptic, which see. It is used as a bactericide and detergent. It is approximately one-half the strength of the U. S. P. solution of formaldehyde.

Veronal. (Diethylbarbituric Acid—Diethylmalonylurea.)

This is a white, crystalline powder, odorless, of a faintly bitter taste, soluble in about 150 parts of cold water and 12 parts of boiling water. It forms alkaline salts which are easily soluble. It is recommended in simple insomnia, as well as in that accompanying hysteria, neurasthenia, and mental disturbances. The dose is 5 to 15 grains in hot water, tea or milk, or in wafer or capsule followed by a cupful of a warm drink.

Vesipyrin.

This is acetylsalol, being to salol what aspirin is to salicylic acid. It is in white crystals, insoluble in water but soluble in alcohol and other similar solvents. It is recommended for acute articular rheumatism in doses of 15 grains.

Vestosol.

This is stated to be an ointment containing 2% of formaldehyde with some zinc oxid and boric acid. It is recommended especially for bromidrosis and hyperidrosis.

Vial's Capsules of Oil of Juniper.

These are stated to contain, according to Hager, a mixture of oil of juniper berries and empyreumatic oil of juniper.

Viburnal. (205)

Each fluidram is stated to represent 10 grains each of Viburnum prun. and Cimicifuga racemosa and 20 grains of "Helonias comp." The menstruum is stated to be wine.

Vibutero. (187)

This is an elixir, each fluidounce of which is said to represent 40 grains of black haw, 30 grains of cramp bark, 20 grains each of squaw vine, wild yam, Jamaica dogwood, and saw palmetto berries, and 5 grains of pulsatilla, in a menstruum containing 17% of alcohol.

Viferral.

See Hydronal.

Villosa Compound. (49)

This is stated to contain 30 grains each of Dioscorea villosa and Viburnum

oxycoccus, 15 grains each of Scutellaria lateriflora, Hydrastis canadensis, and Cinnamomum zeylanicum, 20 grains of chloral hydrate, and 40 grains of potassium bromid to each fluidounce, with suitable aromatics.

Vin Nourry Iodotane.

See Nourry's Iodinated Wine.

Vindone.

A trade synonym for grape juice.

Vinette. (193)

Each two fluidounces is stated to contain 4 grains of iron hypophosphate, 10 grains each of potassium and sodium hypophosphites, 15 grains of magnesium hypophosphite, ½ dram of tincture of sweet orange, 1 dram each of the compound tinctures of gentian and cinchona, and sherry wine and carminatives.

Vinopyrin.

This is a tartaric acid combination of parphenetidin and is therefore closely related to phenacetine. It is a white crystalline powder, soluble in 25 parts of cold water, more soluble in boiling water with some decomposition, less readily soluble in alcohol, and insoluble in ether. It is used as an antipyretic and antineuralgic in doses of 10 to 15 grains three or four times a day.

Vioform. (Iodochloroxyquinolin.)

This is a very voluminous greenish-yellow powder, nearly odorless, insoluble in water, slightly soluble in alcohol, and is six times as bulky as odoform. It contains about 42% of iodine. It is used as an antiseptic and hemostatic and is said to be non-toxic and non-irritant. It is used as a dusting powder, and in ointments, sprays, suppositories or gauze (which see).

Vioform Gauze.

This is gauze impregnated with a solution of 10 g. of vioform, 50 g. of absolute alcohol, 10 g. of sugar, 25 g. of glycerin, and 500 g. of water.

Viola Cream.

According to Campbell's analysis this contains 2.8% of corrosive sublimate.

Virilin.

This is stated to be a combination of yohimbin, zinc phosphid, and glycerophosphates of lime, soda, iron, and strychnine. It is put up in boxes containing 21 capsules. It is recommended as an aphrodisiac.

Virol. (27)

This is stated to be composed of extract of malt, red bone marrow, and fresh eggs.

Viscin.

This is a glutinous substance resembling bird lime and is employed as a substitute for rubber in the manufacture of such articles as adhesive plaster and as a means of applying remedies in skin diseases. Its advantage over rubber is its price.

Viscolan.

This is a mixture of 3 parts of purified viscin (which see) and 2 parts of anhydrous wool fat. It is a neutral ointment vehicle which does not become rancid.

Viskolein. (123)

This is put up in three forms, the formulas for which according to the manufacturers are as follows:

No. 1 (6-grain tablets).—Phenylamine, caffeine, "kolein" and boric acid, in chemical proportions, 5 17-20 grains; menthol, thymol and eucalyptol, each 1/20 grain.

No. 2 (6-grain capsules).—Sulfocarbolates of zinc and soda, each 2 grains, "kolein," 1½ grains "phenol-benzolate," 7/20 grain, menthol, thymol and eucalyptol, each, 1/20 grain.

No. 3 (Hypodermic solution).—This is a saturated solution of No. 2.

Vitalic Hypophosphites. (143)

This is stated to contain the following hypophosphites in each fluidounce: Potassium, 1½ grains, sodium, 1½ grains, iron, 1¼ grains, manganese, 1 grain, quinine, 7/16 grain, and strychnine, ⅛ grain.

Vitose. (191)

This is a new ointment vehicle which is described as a glycerin-oil-albuminate.

It is said to be odorless, without tendency to rancidity, and miscible with glycerin, water or oils.

Volesan.

This is put up in gelatin capsules each one of which contains approximately 1/24 grain of heroin, 4 grains of tolu balsam, 1 grain of camphor, and 5 grains of creosote carbonate.

Voseptol.

This is a vanadium preparation which has been recommended as a useful antiseptic and healing application to wounds and abraded surfaces.

Vulneral.

This is said to contain benzoin, myrrh, petrolatum, spermaceti, lanolin, boric acid, zinc oxid, carbolic acid, aluminium acetate, camphor and lard.

Vulnoplast.

This is an antiseptic gauze dressing composed of three layers, the lower one being covered with a gelatin vehicle containing 10% of protargol and 5% of xeroform. The second layer is absorbent cotton and the third layer is medicated gauze again.

"W-A" Intestinal Antiseptic.

This is stated to be a mixture of the chemically pure sulfocarbolates of lime, soda and zinc.

Wampole's Antiseptic Solution.

See Formolid.

Wampole's Preparation of Cascara Bark.

Each fluidram is stated to represent 15 grains of cascara sagrada, 7½ grains each of mandrake and dandelion, and aromatics.

Wampole's Preparation of Extract of Cod Liver.

This is stated to contain a solution of the extractive obtainable from fresh cod liver, combined with liquid extract of malt, fluid extract of wild cherry bark, and compound syrup of hypophosphites (containing calcium, sodium, potassium, iron, manganese, quinine, and strychnine).

Ward's Essence for Headache.

The following resembles and is generally sold for it (Cooley):

Camphor	av. oz.	3
Oil of lavender.....	fl. dr.	4½
Ammonia water	fl. oz.	8
Alcohol	fl. oz.	20

Mix, close the vessel, and agitate occasionally until the camphor is dissolved.

Waterbury's Cod Liver Oil (Metalbolized) Compound. (214)

This is stated to contain

"Cod liver oil (metalbolized)....."	25%
Unfermented malt extract.....	25%
Hypophosphites co. special.....	25%
Extracts cherry, eucalyptus and aromatics	25%

It is also put up so that each tablespoonful contains 2 minims of creosote and 1 minim of guaiacol.

Waterbury's Glyco-Chlorides.

See Glyco-Chlorides.

Watt's Anti-Rheumatic Pills.

Aloes	gr.	240
Gamboge	gr.	240
Hellebore	gr.	120
Calomel	gr.	30
Guaiac	gr.	30
Yellow sulfid of antimony.....	gr.	15
Oil of clove.....	m.	30
Soap	gr.	60
Spirit of camphor.....	sufficient	
Make into 5-grain pills.—Nat. Dr.		

Waterhouse Uterine Wafers.

The formula given in the advertisements is "ex. calendula," "ex. tiger lily," "ex. jequirity," and boracic acid.

Waxham's Tonic Pills

Each is stated to contain

Cinchonidine sulfate	gr.	1
Extract of prickly ash.....	gr.	¼
Extract of red cinchona	gr.	¼
Extract of dogwood	gr.	¼
Capsicum	gr.	¼

Wayne's Aphrodisiac Tablets.

See Tonic Aphrodisiac Tablets.

Weeks' Anti-Constipation Pills.

Each pill is stated to contain ⅓ grain each of aloin, podophyllin, and extracts of belladonna and nux vomica.

Weeks' Little Devils.

Each of the "active" pills is stated

to contain 1/10 grain each of aloin, compound extract of colocynth and extract of nux vomica, ⅓ grain of resin of podophyllin, 1/15 grain of croton oil, and 1/128 grain of oleoresin of capsicum.

The "mild" pills are stated to contain, each, leptandrin, 1/32 grain; aloin and extract of henbane, each 1/16 grain; podophyllin, 1/6 grain; gamboge, 1/64 grain; and oils of capsicum and peppermint, each 1/128 grain.

Weber's Alpine Tea.

According to Hager this is composed of senna leaves, mallow leaves, coltsfoot herb, wood betony, woodruff herb, arnica, calendula, yarrow, elder, melilotus, guaiac wood, unpeeled sweet wood, etc.

Weinmann's Dental Anæsthetic.

This contains about 5¼% of cocaine hydrochlorate, also alcohol, oil of peppermint and iodine (indicating possibly aristol).—Sadtler.

Weld's Syrup of Iron Chlorid.

See Syrup of Iron Chlorid.

Westphal's Auxiliator.

According to analysis by the chemist of the New Hampshire Board of Health, this was found to have 3.56% residue on evaporation, glycerin, and borax or boric acid. There was also found 54.8% of alcohol of which one-fifth was wood alcohol.

Wheeler's Tissue Phosphates. (Compound Elixir of Phosphates and Calisaya.)

This is stated to contain bone-calcium phosphate, sodium phosphate, ferrous phosphate, trihydrogen phosphate, and the active principles of calisaya and wild cherry.

Wheeler's Nerve Vitalizer.

According to an analysis, conducted in the laboratory of the American Medical Association, this was found to contain potassium, sodium and bromine equal in amount to 12.61 g. of potassium bromide and 6.30 g. of sodium bromide in 100 cc. Syrup of licorice is apparently used to disguise the taste of the salts.

White's Eye Water.

Contains 1.73% of zinc sulfate, 2% of honey, 2.56% of alcohol, and 0.2% of free acetic acid.—Apoth. Ztg.; analysis by Dr. H. Weller.

White's (Peleg) Salve.

Burgundy pitchav. oz. 12
Yellow waxav. oz. 1
—Nelson's Handbook.

Whitehead's Spirit of Mustard.

According to Hager this is a mixture of

Oil of turpentineg. 20
Oil of rosemaryg. 10
Camphorg. 5
Spirit of mustardg. 50
Alcoholg. 100

Wickersheimer's Preservative Fluid.

There are two such liquids, one intended for the preservation of meats and patented in the United States in 1881, consists of 15 g. of common salt, 60 g. of alum, 9 g. of salicylic acid, 45 g. of methyl alcohol, 250 g. of glycerin, and 3 liters of water.

The other was patented in Germany and is intended for the preservation of anatomical specimens. It is composed according to Hager, of 60 g. of potash, 25 g. of common salt, 12 g. of salt peter, 20 g. of arsenous acid, 100 g. of alum, 300 g. of methyl alcohol, 1550 g. of glycerin, and 3 liters of water.

Wiesel's Vin Kollerina Comp. (Comp. Wine of Cocoa. (216)

According to the manufacturer, this is a compound wine of cocoa with celery, chamomile, and aromatics.

Wild Cherry and Morrhuale Cordial. (141)

According to the manufacturers' statement, each fluidounce contains

Calcium hypophosphitegr. 2
Potassium hypophosphitegr. 4
Sodium hypophosphitegr. 4
Manganese hypophosphitegr. 1
Strych. phosph.gr. 1/64
Arsenic trioxidgr. 1/64
Fld. wild cherry, sol.m. 16
Extract maltm. 5
Pepsin (1:3000)gr. 2
Guaiacolm. 1/2
Morrhuolm. 1 1/4
Glycerin and wineq. s.

William's Aphroditic Lymph. (144)

This is said to contain the active principles of fresh bull's testicles and of goat's cord and brain.

Winchester's Hypophosphites.

This is described as a solution of the hypophosphites of lime and soda without syrup.

Wine of Cod Liver Oil Comp.

See Hosteley's Wine of Cod Liver Oil Comp.

Wine of Cod Liver Oil Extract with Cherry and Hypophosphites. (221)

This is stated to represent one-fourth its volume of cod liver oil with extract of malt, fluid extract of wild cherry bark, and the hypophosphites of lime, sodium, potassium, iron, manganese, quinine and strychnine.

Wine of Cod Liver Oil Extract with Peptonate of Iron.

See Stearn's Wine.

Wine of Hypophosphites Comp.

See Elixir Vigorans.

Wine of Mitchella, Compound. (17)

This is stated to be composed of mitchella repens, cimicifuga, senecio, viburnum prunifolium, and hyoscyamus formed into a vinous elixir with the fermented juice of the fruit of Rhus glabrum.

Wine of Senecio Compound. (36)

Each fluidram is stated to represent 10 grains each of senecio aureus and viburnum prunifolium, 5 grains each of hydrastis canadensis and helonias dioica, 8 grains of mitchella repens, 2 grains of cimicifuga racemosa, and 1 grain each of pulsatilla and conium maculatum seed.

Wismol. (30)

This is said to be a mixture of magnesium peroxid with bismuth oxid. On contact with wound surfaces, oxygen is liberated and hence it has been recommended as a substitute for iodoform. It is a fine, white powder, odorless and tasteless, and insoluble in ordinary solvents.

Wistar's Cough Lozenges.

The following is given by Cooley:

Gum arabic	av.oz.	2½
Extract of licorice	av.oz.	2½
Sugar	av.oz.	2½
Opium, powder	gr.	60
Oil of anise	drops	40

For 60 lozenges.

The troches of glycyrrhiza and opium, U. S. P., contain the same ingredients, but are only about ⅓ of the size of the preceding.

Wither's Antizymotic Solution.

The following contains the same essential ingredients as were found by Bierbach's analysis in the original:

Corrosive sublimate	gr.	16
Aluminum chlorid	gr.	6
Zinc chlorid	gr.	3½
Potassium chlorid	gr.	6
Sodium chlorid	gr.	60
Hydrochloric acid	m	15
Water to make	fl.oz.	16

Wlinsl's Paper.

The following is the formula, according to Hager:

Fruit of capsicum annum	g.	20
Benzoin	g.	6
Euphorbium	g.	2
Copaiba balsam	g.	1
Dragon's blood	g.	1
Absolute alcohol	g.	120

Macerate the capsicum with the alcohol for 3 days and express. To the liquid obtained, add the other ingredients, macerate again for 3 days, and filter. Evaporate the filtrate at a gentle heat to 60 g. This liquid is then spread on thin paper. In using this, strips of the paper, slightly warmed, are to be placed over the aching parts.

Woodbridge Treatment of Typhoid Fever.

This method of treatment of typhoid requires the employment of the three formulas:

I. (Tablets.)

Podophyllin	gr.	1/960
Calomel	gr.	1/16
Guaiacol carbonate	gr.	1/16
Menthol	gr.	1/16
Eucalyptol	sufficient	

II. (Tablets.)

Podophyllin	gr.	1/960
Calomel	gr.	1/16

Guaiacol carbonate	gr.	¼
Menthol	gr.	1/16
Thymol	gr.	1/16
Eucalyptol	sufficient	

III. (Capsules.)

Guaiacol carbonate	gr.	3
Thymol	gr.	1
Menthol	gr.	½
Eucalyptol	m.	5

IV. (Tablets for children.)

Podophyllin	gr.	1/960
Calomel	gr.	1/16
Guaiacol carbonate	gr.	⅛
Menthol	gr.	1/96
Eucalyptol	sufficient	

V. (Capsules for children.)

Guaiacol carbonate	gr.	½
Thymol	gr.	⅛
Menthol	gr.	1/16
Eucalyptol	m.	1
Olive oil	sufficient	

Worden's Nasal and Throat Spray—Geolinum Antisepticum.

This consists of geoline combined with menthol, eucalyptol and terebene.

Wright's Condensed Smoke.

This is presumably, like the other preparations of this kind, crude pyroligneous acid.

Wyeth's Effervescing Headache Salts.

See Caf-Acetan.

Xanol. (131)

This is a name for sodio-caffeine salicylate, which is a white powder freely soluble in water, and is decomposed by acids.

Xaxa.

This is a name for acetylsalicylic acid.

Xeroform. (Tribromphenol—Bismuth.)

This is a chemical combination of bismuthyl oxid and tribromphenol, containing nearly 60% of the former. It is a fine, yellow, nearly odorless and tasteless powder. It is insoluble in water, alcohol, chloroform, and oils, but is soluble in 3½ parts of 2% hydrochloric acid. It is decomposed by alkalis, but not by temperatures below 120° C. so that it may be sterilized.

It is stated to be a non-irritant and

non-toxic antiseptic and is recommended as an odorless substitute for iodoform. Internally it is used for cholera infantum, dysentery, intestinal tuberculosis, etc., in doses of 15 to 45 grains for adults or 2 to 5 grains for children.

Xylol. (Xylene—Dimethylbenzene.)

This is a colorless, inflammable liquid. It is given internally in small-pox in doses of 3 to 10 minims, dissolved in oil and made into emulsion or put into capsules.

Yale's (Mme.) Hair Tonic.

According to an analysis by the chemist of the New Hampshire Board of Health, this was found to contain 2.09% residue on evaporation, largely glycerin with cinchona alkaloids. The preparation gave a slight reaction for boric acid or borax; no vesicating substance was found. It contained 17% of ethyl alcohol.

Yohimbine.

This is an alkaloid obtained from the bark of the Cameroon tree growing in West Africa. It is credited with aphrodisiac properties, being at the same time innocuous. It is marketed in the form of powder and 1/12 grain tablets which latter contain 1/12 grain of the hydrochlorid. The usual dose is 1 to 3 tablets per day.

Zaza's (Mme.) Toilet Cream.

When analyzed by the chemist of the New Hampshire Board of Health, this was found to contain boric acid or borax, volatile oils, a vegetable gum, probably tragacanth, and glycerin.

Ze-An. (143)

This is described as a concentrated fluid extract of corn silk, 8 times the strength of the ordinary fluid extract.

Ze-An, Lithiated.

Each fluidounce is stated to represent 8 ounces of fresh corn silk and contains also 12 grains each of lithium benzoate and salicylate.

Ze-Aseptine. (Ze-An, Forminated.)

Each fluidounce is stated to represent

8 ounces of fresh corn silk and 16 grains of hexamethylenamine.

Zemacol. (Eczema Colloid.) (148)

This is stated to be the extract of the rete mucosum of the healthy yearling lamb, combined with glycerin and salicylic acid.

Zepp's Dandruff Cure.

This is labeled as containing 46% of grain alcohol. The chemist of the New Hampshire Board of Health found it to contain a small amount of borax, cantharides, and glycerin. The total solids amounted to 2%.

Zinc Permanganate.

This is in almost black hygroscopic crystals very much resembling those of the potassium salt, and is readily soluble in water. It is an antiseptic and disinfectant. It is used as a collyrium in a strength of 1 or 2 to 1000 and as an injection in gonorrhea, 1:4000. It must not be mixed with organic matter as an explosion may occur.

Zinc Perhydrol. (130)

This is a compound containing 50% of zinc dioxid and 50% of zinc oxid. It is a white powder, insoluble in water but decomposed by acids with liberation of hydrogen peroxid. It is applied to wounds and ulcerating surfaces, and has the advantage over sodium dioxid that the product of decomposition is not a caustic substance but the inert zinc oxid. It is applied as a dusting powder or in 10% ointment.

Zinc Sulfocarbolate.

This is in colorless or faintly pinkish crystals, odorless, of a slight metallic taste, and very soluble in water or alcohol. It is used internally as an intestinal disinfectant and externally for gonorrhea or wounds in 1/2 to 1% solutions. The dose is about 2 grains.

Zinol.

This is stated to consist of 1 part of zinc acetate and 4 of "albumin naphtho-sulfonate." It is recommended in the

treatment of gonorrhea by injection in the proportion of 12 to 24 grains to the pint.

Zoa-Phora Remedies.

Zoa-Phora itself is stated to contain 15% of alcohol, the pile cure $\frac{1}{2}$ grain of opium to each suppository and the "vitalizing cones" $\frac{3}{8}$ grain of opium to each suppository.

Zomol.

This is described as an antituberculous serum of desiccated muscular plasma representing 200 times its weight of raw meat.

Zoolak. (55)

This is the fermented milk food formerly sold under the name matzoon.

Zumo-Anana. (233)

This is described as a pineapple digestive wine containing 50% of ripe pineapple juice and its proteolytic ferments in a concentrated form.

Zymin.

This is described as a dried, sterilized yeast intended for medicinal purposes.

Zymocide. (167)

This is stated to contain colorless extract of golden seal, colorless extract of calendula, extract of witch hazel, zinc sulfocarbonate, boracic acid, thymolate of soda, menthol, oils of wintergreen, spearmint and eucalyptus, and 18.14% of alcohol by volume (14.73% by weight).

Zymoidin.

This is an antiseptic said to be composed of oxids of zinc, bismuth and aluminium with iodine, boric, carbolic, gallic and salicylic acids, quinine, etc.

—Coblentz.

Zymphene.

Chemically this is sodium metaoxycyanocinnamate. It is in yellowish crystals, soluble in water or alcohol. It is used as a tonic and digestive stimulant, especially in loss of appetite. The dose is 8 grains.

REFERENCE LIST

The following list gives the names of manufacturers whose products are mentioned in Part III. The number preceding the name and address corresponds to the number following the name of the preparation.

1. Abbott Alkaloidal Co., Chicago, Ill.
2. Allen & Hanburys, London, Eng.
3. Alphazol Co., New York, N. Y.
4. Alta Pharmacal Co., St. Louis, Mo.
5. Amenorott Co.
6. American Therapeutic Co., New York N. Y.
7. Angier Chem. Co., Boston, Mass.
8. Anglo-American Phar. Co., New York, N. Y.
9. Anhydrosine Co., Denver, Col.
10. Antibrute Chem. Co., St. Louis, Mo.
11. Antisapron Chem. Co., Henderson, Ky.
12. Argol Co., Danbury, Conn.
13. Arlington Chem. Co., Yonkers, N. Y.
14. Armour & Co., Chicago, Ill.
15. Armstrong Mfg. Co., Boston, Mass.
16. Attfield Chem. Co.
17. Baker & Co., Chicago, Ill.
18. Barnes & Hille, Philadelphia, Pa.
19. Battle & Co., St. Louis, Mo.
20. Bell & Co., New York, N. Y.
21. Biersdorf & Co., Hamburg, Ger.
22. Billings, Clapp & Co., Boston, Mass.
23. Binz, E. G., Los Angeles, Cal.
24. Bioplasm Co., New York, N. Y.
25. Bishop, A., London, Eng.
26. Boehringer & Sons, New York, N. Y.
27. Bovril Co., London, Eng.
28. Boraline Chem. Co., Baltimore, Md.
29. Bristol-Myers Co., New York, N. Y.
30. Buchlos, Frankfurt, Germany.
31. Burrough Bros., Baltimore, Md.
32. Burroughs, Wellcome & Co., London, Eng.
33. Cathcart & Force Co., Newburgh, N. Y.
34. Cassia Drug Co., Los Angeles, Cal.
35. Central Chem. Co., New York, N. Y.
36. Chapman Mfg. Co., Chicago, Ill.
37. Chem. & Elect. Co., New York, N. Y.
38. Cherry, W. W., Trenton, N. J.
39. Chesebrough Mfg. Co., New York, N. Y.
40. Chira Chem. Co., Louisville, Ky.
41. Citrosandalene Co., New York, N. Y.
42. Citrozon Lab., Cologne, Germany.
43. Clafin & Co., Providence, R. I.
44. Clin & Co., Paris, France.
45. Clinton Phar. Co.
46. Clottlin Chem. Co., New York, N. Y.
47. Codliver-Glycerine Co., St. Louis and New York.
48. Combs Chem. Co., St. Louis, Mo.
49. Converse Chem. Co., St. Louis, Mo.
50. Cortexalin Co., New York, N. Y.
51. Cosmos Chem. Co., New York, N. Y.
52. Crowell, Rufus, & Co., New York, N. Y.
53. C. & P. Chem. Co., Chicago, Ill.
54. Dad Chem. Co., New York, N. Y.
55. Dadirrian, New York, N. Y.
56. Daniel, J. B., Atlanta, Ga.
57. Davis Phar. Co.
58. Dawson Phar. Co., Dawson Springs, Ky.
59. Decary, A., Montreal, Canada.
60. Delta Diphthero Co., Evansville, Ind.
61. Denver Chemical Co., New York, N. Y.
62. Dieterich E., Helfenberg, Germany.
63. Dinet & Delfosse, Chicago, Ill.
64. Dios Chem. Co., St. Louis, Mo.
65. Echino Chem. Co.
66. East Ave. Drug Co., Cleveland, O.
67. Elmer & Amend, New York, N. Y.
68. Eunetra Phar. Co., Detroit, Mich.
69. Ensoma Phar. Co., Cincinnati, O.
70. Fairchild Bros. & Foster, New York, N. Y.

71. Ferrol Med. Co., Markham, Ont.
72. Fitchmul Co., Concord, N. H.
73. Flint, J. G., Decatur, Ill.
74. Forbes Diastase Co., Marietta, O.
75. Foster, Dack Co., Chicago, Ill.
76. Fraser & Co., Philadelphia, Pa.
77. Fries Bros., New York, N. Y.
78. Gardner, R. W., Orange, N. J.
79. Gardner-Barada Co., Chicago, Ill.
81. Girard Chem. Co., Philadelphia, Pa.
82. Goat Lymph Sanitarium Assn., Chicago, Ill.
83. Goshen Pharmaceutical Co., Goshen, Ind.
84. Grape Capsule Co., Allentown, Pa.
85. Gray, Toronto, Canada.
86. Grosvenor & Co., Boston, Mass.
87. Hall Bros. & Co., Kalamazoo, Mich.
88. Halsey Bros., Chicago, Ill.
89. Hance Bros. & White, Philadelphia, Pa.
90. Hancock, J. F., Baltimore, Md.
91. Hart, E. J. & Co., New Orleans, La.
92. Hartz, The J. F. Co., Detroit and Toronto.
93. Harvey, G. F. Co., Saratoga Springs, N. Y.
94. Harvey & Co., Saratoga Springs, N. Y.
95. Hayes Phar. Co., Phoenixville, Pa.
96. Helfenberg Chem. Works, Helfenberg, Ger.
97. Henry Pharmaceutical Co., Louisville, Ky.
98. Hoffman-Laroche Co., New York, N. Y.
99. Hood & Co., Lowell, Mass.
100. Johnson, M. & Co., Jersey City, N. J.
101. Jordan & Co., Charlotte, N. C.
102. Kahama Chem. Co., Erie, Pa.
103. Kalle & Co.
104. Katharmon Chem. Co., St. Louis, Mo.
105. Keasbey & Mattison, Ambler, Pa.
106. Keimol Chem. Co., Baltimore, Md.
107. Kenyon Chem. Co.
108. Killgore, Chas., New York, N. Y.
109. Knoll & Co., New York, N. Y.
110. Kornitzer, Vienna, Austria.
111. Kremers & Urban Co., Milwaukee, Wis.
112. Kress & Owen Co., New York, N. Y.
113. Lambert Phar. Co., New York, N. Y.
114. Lavaris Chem. Co., Minneapolis, Minn.
115. Lehn & Fink, New York, N. Y.
116. Liberty Chem. Co., Philadelphia, Pa.
117. Lily, Eli & Co., Indianapolis, Ind.
118. Lloyd Bros., Cincinnati, O.
119. Loring & Co., New York, N. Y.
120. McCoy-Howe Co., Indianapolis, Ind.
121. McKesson & Robbins, New York, N. Y.
122. Mallinckrodt Chem. Works, St. Louis, Mo.
123. Maltbie Chem. Co., New York, N. Y.
124. Maltine Co., Brooklyn, N. Y.
125. Malt-Diatase Co., New York, N. Y.
126. Manola Co., St. Louis, Mo.
127. Marchand, Chas., New York, N. Y.
128. Martindale, W., London, Eng.
129. Mercer Chem. Co., Trenton, N. J.
130. Merck & Co., New York, N. Y.
131. Merrell, Wm. S. Chem. Co., Cincinnati, O.
132. Metcalf, Theodore & Co., Boston, Mass.
133. Meyer Bros., St. Louis, Mo.
134. Miller, T. A., Richmond, Va.
135. Milliken & Co., St. Louis, Mo.
136. Mitchell, C. L., Philadelphia, Pa.
137. Morgan, T. C. & Co., New York, N. Y.
138. Morgan Co., The same as preceding.
139. Morris, Zahn & Co., Berlin, Ger.
140. Morse, Hazen, New Rochelle, N. Y.
141. Mulford Co., H. K., Philadelphia, Pa.
142. National Pharmacy Co., Oakland, Cal.
143. Nelson, Baker & Co., Detroit, Mich.
144. New Animal Therapy Co., Chicago, Ill.
145. N. Y. Phar. Ass'n, Yonkers, N. Y.
146. North Chem. Co., Peoria, Ill.
147. Norway Phar. Co., New York, N. Y.
148. Norwich Pharmacal Co., Norwich, N. Y.
149. Nourry, J., France.
150. Nu Tone Co., Lowell, Mass.
151. Nutrolactis Co., New York, N. Y.
152. Oakland Chem. Co., New York, N. Y.
153. Ophthalmic Remedy Co.
154. Osborn-Colwell Co., New York, N. Y.
155. Oxychlorine Chem. Co., Chicago, Ill.
156. Ozomulsion Co., New York, N. Y.
157. Ozomuro Chem. Co., Omaha, Neb.
158. Pallsade Mfg. Co., Yonkers, N. Y.
159. Parke, Davis & Co., Detroit, Mich.
160. Patch, E. L. & Co., Boston, Mass.
161. Pearson Co., Germany.
162. Peter-Neat-Richardson Co., Louisville, Ky.
163. Phenique Chem. Co., St. Louis, Mo.
164. Phillips Co., C. H., New York, N. Y.
165. Pulvola Chem. Co., New York, N. Y.
166. Red Chem. Co.
167. Reed & Carrick, New York, N. Y.
168. Reichelt, Breslau, Germany.
169. Reichter, F. C., Chicago, Ill.
170. Resinol Chem. Co., Baltimore, Md.
171. Rex Pharmaceutical Co.
172. Riedel, Berlin, Germany.
173. Rio Chem. Co., St. Louis, Mo.
174. Roessler & Hasslacher, New York, N. Y.
175. Rump & Lehnars, Hanover, Germany.
176. Russell & Lawrie, Tarrytown, N. J.
177. St. Louis Phar. Co., St. Louis, Mo.
178. Schering, Berlin, Germany.
179. Schieffelin & Co., New York, N. Y.
180. Schlottbeck & Foss Co., Portland, Me.
181. Searle & Hereth Co., St. Louis, Mo.
182. Seydel & Rodgers, St. Louis, Mo.
- 182a. Sharp & Dohme, Baltimore, Md.
183. Smith, Martin H., New York, N. Y.
184. Squibb, E. R. Co., Brooklyn, N. Y.
185. Squire & Sons, London, Eng.
186. Standard Chem. Co., Brooklyn, N. Y.
187. Stearns, Fred'k. & Co., Detroit, Mich.
188. Stearns & White Co., Chicago, Ill.
189. Strong, F. H. Co., New York, N. Y.
190. Strong, Cobb & Co., Cleveland, O.
191. Stroschein, I. E., Berlin, Germany.
192. Sutliff & Co., Peoria, Ill.
193. Theller, New York, N. Y.
194. Tilden Co., New Lebanon, N. Y.
195. Trades Chem. Co.
196. Truax, Greene & Co., Chicago, Ill.
197. U. S. Ferrol Co., Buffalo, N. Y.
198. U. S. Pharmaceutical Co. (Texas).
199. Upton Co., Kalamazoo, Mich.
200. Valley Chem. Co., Danbury, Conn.
201. Van Horn & Co., New York, N. Y.
202. Vass Chem. Co., Danbury, Conn.
203. Veroform Hygienic Co., New York, N. Y.
204. Vial, Paris, France.
205. Viburnal Chem. Co., Madison, Wis.
206. Vigorans Chem. Co., St. Louis, Mo.
207. Virginia Pharm. Co., Richmond, Va.
208. Walker-Green Phar. Co., Kansas City, Mo.
209. Walker Phar. Co., St. Louis, Mo.
210. Wallau, G. J., New York, N. Y.
211. Wampole & Co., Philadelphia, Pa.
212. Warner, Wm. R. & Co., Philadelphia, Pa.
213. Washington Chem. Co., Washington, D. C.
214. Waterbury Chem. Co., Des Moines, Ia.
215. Weeks, D. & C. Co., Jackson, Mich.
216. Wiesel, Baltimore, Md.
217. Winslow Laboratory, New York, N. Y.
218. Wood & Flint, Decatur, Ill.
219. Woodruff, I. O. & Co., New York, N. Y.
220. Worden, C. E.
221. Wreth & Bro., Philadelphia.
222. Zimmer & Co., Frankfurt, Germany.
223. Zumo Phar. Co., St. Louis, Mo.

PART IV.

PERFUMES AND TOILET ARTICLES

HISTORICAL NOTES.

The first perfume was the fragrant flower and it still continues to be the favorite despite all the artificial combinations that man has designed. The use of perfumes, cosmetics, hair dyes, etc., dates back as far as recorded history.

The Orient and Egypt were the cradle of the art of perfumery and of the use of cosmetics, etc., although there is apparently no record of their use among the Chinese and Japanese. The Egyptians and Phœnicians and earlier peoples employed perfumes and cosmetics. Among these people as among the people of to-day, pleasing odors were used, the face and body were ornamented or beautified or oiled, the hair was colored, frizzed, etc., and similar arts were in vogue.

The Jews learned these arts from the Egyptians during their stay in Goshen but they never became as extravagant in their use as the latter. The Bible contains many references to incense but the Jews employed this mainly for religious purposes, incense being burned in the synagogues in censers, a custom still continued by the Catholics today.

The Greeks were also adepts in the use of perfumes and cosmetics. The Romans were the pupils of the Greeks in these arts as well as in others and during the consulates and empire, the use of these substances was carried to extremes, so much so that laws were passed against them.

When the almost savage Huns and Goths swept down over Rome, the use of perfumes and cosmetics almost ceased in Europe.

At this time, however, the Arabian empire rose to prominence both as a nation and in the arts and sciences. The

Arabs, the ancient masters of chemistry, were also versed in the manufacture of perfumes and cosmetics. A number of books on these subjects were written by Arabians during the tenth and eleventh centuries.

Intercourse with the Orient brought about by the Crusades again made Europeans familiar with the art of perfumery. Italy and France, in those days the representatives of culture, were the countries in which the preparation of perfumes and cosmetics was carried on on a large scale. A member of a Roman family by the name of Frangipanni invented the perfume bearing this name.

In England, perfumes and cosmetics were not in general use until the reign of Queen Elizabeth. She apparently used these substances in great abundance, and the people soon followed the example of the court. In fact to such extent were they used that Parliament passed an act in 1770 that if a woman of whatever age or rank, be she maid or widow, beguile any man and inveigle him into matrimony by the use of perfumery, false hair, corsets, hooped petticoats, high heels, or false hips, she shall suffer the penalty of the law and the marriage shall be null and void.

CHAPTER I.

DISTINCTIVELY ODOR PREPARATIONS.

These are preparations used mainly or largely for their odor include Handkerchief Extracts, Sachet Powders, Solid Perfumes, Pot Pourris, Fumigating Pastilles, Powders, etc.; Cologne Waters, Toilet Waters, Bay Rum, Toilet Vinegars, and Smelling Salts.

Fine perfumes can be prepared only by the use of good material; in fact, the

best obtainable is none too good for a discriminating taste. In the following paragraphs will be outlined the requisites of the best materials.

EXTRACTION OF FLOWER ODORS.

Flower odors are extracted in various ways, depending on the volatility or the relative proportion of the particular odor to be captured, and in numerous instances more than one method is used for extracting the same odor. Curiously enough, an odorous oil extracted by one method does not always smell the same as when extracted by another method. For example, oil of rose obtained by distillation is not the same as when extracted by the more delicate process of enfleurage or by means of volatile solvents.

The application of heat during distillation causes chemical changes such as hydrolysis of various delicate constituents and the water absorbs or dissolves some of the ingredients which are therefore lost to the oil.

Oils of rosemary, thyme, lavender, geranium, rose and orange flowers are obtained by distillation of the flowers, or, in the case of roses, of the petals alone, with water, this being the most ancient method of obtaining these principles. Upon standing, the oil floats out on the surface of the distillate while the water may be used again for distilling more oil or it may be sold in the markets as an aromatic water.

Process 2. For Extraction of Odors.

—If, instead of distilling the flowers with water, they are placed on glass plates in wooden frames (resembling window sashes) with thin layers of purified lard, or lard and suet, the process is called enfleurage. A number of these frames are also placed on top of one another, and every day fresh flowers are placed upon the fat until the latter is saturated with perfume. These perfumed fats, known as pomades (pomades in French), are sent into the market in different degrees of saturation

which are indicated by numbers, viz., 8, 12, 16, 30, etc. Rose petals and the flowers of the orange, jasmine, tuberose, cassie, violet, mimosa, heliotrope, reseda or mignonette, and jonquille are treated in this manner.

Delicate floral odors are extracted in this manner which would be ruined by the heat of distillation. The odorous principles are subsequently extracted from the pomade with alcohol which dissolves out the perfume from the mixture of odor and fat.

Process 3.—Still another method of extraction of floral odors is that of hot maceration in which the flowers are immersed and paddled in purified lard which is kept melted and hot. The flowers are separated from the lard by straining and all the fat is removed by subjecting them to pressure. Roses, orange flowers, cassie blossoms and violets are extracted in this manner.

Process 4.—A German firm extracts these flowers with a purified paraffin oil, from which the perfume is to be extracted by agitation with alcohol. The perfumed oil is of unlimited permanency and entirely free from rancidity, and the residue after extraction with alcohol may be used for making hair oil and for other purposes. Other oils, such as olive oil, are also used for the extraction of flower odors. Such impregnated oils have been known "huiles antiques," latterly as "huiles aux fleurs." The perfume may be extracted, as already stated, by agitation with alcohol and subsequent decantation of the spirituous liquid.

Process 5.—This method is an entirely modern one and consists in extracting the odoriferous principles by means of an inodorous (or nearly so) volatile solvent which is subsequently distilled off in a vacuum and is used over again for the same purpose. The perfume remains behind in a solid or semi-solid form known as a "concrete oil" or "solid essence." The idea of this process is credited to the chemist Robiquet as early

as the year 1835. Among the solvents used are methyl chlorid, carbon disulfid, chloroform, ether, acetone and petroleum ether. The solvent must leave no residuary odor of its own and must therefore be highly purified for this purpose. In this process the perfume remains behind mixed with waxy, fatty and coloring matters extracted by the solvent. This process of extraction of flower odors has now been improved so that even the waxy and fatty matters are eliminated and the liquid essence, or what is practically the absolute odor of the flower, is now in some cases available. The particulars of these improved processes are usually either secret or patented.

These absolute essences are exceedingly expensive, a kilogram of absolute essence of violets being quoted at about 15,000 francs (nearly \$3,000). For convenience these essences are marketed in the form of alcoholic solutions of such strength as to correspond to the concrete essence. These essences being so very costly are all usually sold in the form of either solid or liquid dilutions, the former being the usual concrete essence of the market.

Process 6.—This method of extracting flower odors is by what is known as the pneumatic method. Air or carbonic anhydride is blown over the flowers onto glass plates coated with lard which latter retains the perfume. This method has not, however, proved satisfactory.

It will be observed that frequently the same flowers are extracted by different processes. The odor is inclined to vary according to the process, that by distillation being the least fragrant but at the same time the most tenacious or enduring. The price of the product also varies in accordance with the fragrance and the yield. The variation in odor very widely, of course, augments the capacity of the perfumer to produce perfumery products.

ESSENTIAL OILS.

It is in the case of volatile oils that the greatest difficulty is experienced in securing first-class material. They should not only be free from adulterations but should be of the very best grade as there is the greatest variation in the quality of essential oils. Adulteration of these oils are very frequently practiced and with the utmost ingenuity to defeat attempts at detection.

In the case of oils containing stearoptens, spermaceti is used as an adulterant. Purified kerosene is also used, also resins, alcohol, rectified oil of turpentine, various other mixtures, and very commonly cheaper or inferior grades of oil of the same kind.

The tests for adulteration are usually the polariscope and solubility in alcohol, full strength or diluted.

The utmost care should be taken to preserve these oils. They should be kept in small, well-stoppered bottles, preferably in a cool and dark place. All of them decompose in time, the odor being altered materially.

Not all volatile oils used for perfumery purposes are obtained from flowers. Some precious and useful oils are obtained from herbs, roots, fruit rinds, woods, etc., such as the oils of orris, orange, lemon, cedrat, bergamot, patchouly, vetiver, geranium, etc.

Only such essential oils are here mentioned as are obtained by such processes as expression and distillation and are placed on the market in the isolated state. Those that are extracted by the process of enfleurage and maceration in oils and require subsequent treatment of the fat with alcohol are referred to under the pomades.

Oil of Bitter Almond is now obtainable deprived of hydrocyanic acid, and owing to the excessively poisonous character of the latter such an oil should be preferred for perfumery purposes. The artificial oil known as benzaldehyde when purified may advantageously re-

place the natural oil. It contains, of course, no hydrocyanic acid. It is now recognized by the U. S. P. This should not be confounded with the so-called oil of mirbane (nitrobenzol or nitrobenzene) which has a resemblance in odor to oil of bitter almonds but is totally unfit for perfumery purposes.

Oil of Bay is an oil used almost exclusively for the manufacture of "bay rum." It contains eugenol which reminds of oil of cloves and terpenes which remind of oil of pimento. It is soluble in about an equal quantity of alcohol, becoming less soluble on standing, due to oxidation of the terpenes. Concurrently the oil becomes thicker and darker.

Oil of Bergamot can usually be obtained of good quality and it is quite permanent. It owes its virtues mainly to linalyl acetate; it also contains linalool. It is adulterated with oils of turpentine, orange, or inferior grades of bergamot.

Oil of the Oils of Lavender Flowers, the English, or so-called "Mitcham," is the most highly esteemed owing to the larger proportion of linalyl acetate present. They also contain linalool and cineol.

Oil of Linaloe is obtained by the distillation of the wood of plants growing in Mexico and Guiana. Its main constituent is linalool which is readily converted into linalyl acetate, the main constituent of oil of bergamot.

Oil of Rose Geranium (or Pelargonium) is of considerable importance as it has an odor similar to that of rose and the distillers and dealers in oil of rose have no hesitancy in adding oil of rose geranium to it. Curiously this latter oil is itself notably subject to adulteration, the principal adulterant being "palmarosa oil" or "oil of ginger-grass," which has a very similar odor. The principal constituent of both palmarosa and rose geranium oils is geraniol or rhodinol which is itself now an article of commerce. Oil of rose geranium is derived by distillation of the leaves. The best

kinds are the French and Spanish oils, the so-called African and Algerian being of inferior quality.

Oil of Neroli or Orange Flowers is of several varieties. What is called Oil of Neroli Bigarade is derived from the flowers of the bitter orange, Oil of Neroli Portugal from the flowers of the sweet orange. The oils are not entirely alike, the Bigarade being much finer in odor and being more expensive. Oil of Neroli Petale is a superior grade of the Bigarade oil. A much inferior oil derived by distillation of the leaves, twigs and unripe fruit of the bitter orange tree is known as Oil of Petitgrain. It is too coarse for use in any fine perfumery. It is said that hardly any pure article reaches the market, the so-called "genuine oil" being a mixture of $\frac{1}{2}$ real oil, $\frac{1}{8}$ oil of bergamot, and $\frac{3}{8}$ of petitgrain oil. It is used in making cologne water.

Of the various kinds of *Oil of Clove*, that known as the Bourbon is most highly esteemed. The main constituent is eugenol, which is now an article of commerce and is recognized by several pharmacopeias.

Lemon and Orange, the two citrine oils, are very frequently adulterated and are very prone to decomposition. These oils on keeping become thickish and acquire a terebenthinate quality which precludes their use from any purpose whatever. They should be preserved like other oils in small, well-stoppered bottles in a cool place. An excellent suggestion is to add 5 or 10% of alcohol to the fresh oil, which assists in keeping the oils in good condition. They are adulterated with alcohol or oil of turpentine. The three fruit oils, bergamot, lemon and orange, are obtained from the rinds of the fruits by breaking open the oil cells on the surface of the fruit and absorbing the oil with a sponge. Inferior grades of oil are obtained by distillation. The main constituent of lemon oil is citral, which is also an article of commerce. For commercial purposes,

citral is derived from another oil, viz., oil of lemon-grass.

Oil of Citron, another fruit oil, is more commonly known as Oil of Cedrat, and is derived from the rind of a fruit similar to the lemon. It is similar to oil of lemon but is of a much richer and more fragrant odor.

Oil of Rose, frequently called otto or attar of roses, is obtained in South-eastern Europe by distillation of rose petals with water. Owing to the small amount of oil they contain, only about one pound to 3,000 pounds of petals, the oil is excessively expensive and this subjects it to the grossest adulterations. The main constituent is the stearopten and this accounts for the frequent adulteration with spermaceti. Oil of rose geranium is also a common adulterant. Rose is a very popular odor and consequently there are many varieties of rose perfumes, besides being a constituent of many other combinations of odors. It is often possible to replace rose partially with rose geranium but this must be done judiciously and is more advantageous in the case of the weaker perfumes like the toilet waters.

Oil of Sandalwood is largely adulterated, usually with castor and other fixed oils. Various mixtures of other oils have posed as santal oil. The best oil is the so-called "English" or East India oil, which should contain nearly 90% of santalol.

Oil of Cedarwood or Red Cedar is like oil of santal an example of a volatile oil derived from a wood. The kind of cedarwood which furnishes this oil is the same as that used for cigar boxes and lead pencils, not the white cedar of the northern regions which furnishes an oil of too great similarity to turpentine to be available for perfumery purposes. The kind known as Florida oil of cedarwood is to be preferred for the manufacture of perfumes.

Oil of Patchouli is a thick, dense oil derived by distillation of the leaves (and, in inferior grades, of the stems)

of an East Indian plant. Oil of cubeb and cedar are frequent adulterants. In a concentrated state it possesses a disagreeable odor, a characteristic of many other essential oils, but in a diluted state is tolerably fragrant. It is added to perfumes mainly to impart stability to the odor.

Oil of Vetiver, like oil of patchouli, comes from India. It is derived by distillation of the rhizome of a large grass called vetiver or kus-kus. Also like patchouli oil, it is of a thickish consistency and it lacks fragrance in concentration. When mixed with flower odors it imparts permanence to the latter.

Oil of Ylang Ylang or *Ihland Ihlang* is derived from the islands of Luzon and Borneo. This word signifies in Tagal language "flower of flowers." The flowers yield the oil upon distillation. The first portions of distillate are sold as oil of ylang ylang, the later portions as Oil of Cananga (or Kananga). The first has a much finer odor and is much more expensive.

Oil of Ceylon Cinnamon is the most highly esteemed of the oils of cinnamon. It is stated that a true cinnamon oil seldom reaches the market, the commercial oil being derived by distilling the peelings of the bark and the leaves. It is usually weak in cinnamic aldehyde, its principal constituent, of which it should contain not less than 75%.

Oil of Orris is obtained by distillation of orris root with steam. Some claim that the oil does not pre-exist in the root but is developed during distillation. The yield is very small, having been variously stated to be from 1/10 to 8/10%. The product obtained is a semi-solid mass which is called "orris butter" or "concrete oil of orris" and contains 85% of myristic acid, an odorless substance. When the latter is removed the residue is known as "concentrated or liquid oil of orris," and it consists mainly of the principle irone, which is the ultimate odorous principle of orris root. Irone is itself an article of commerce.

The oil of orris referred to in the formulas in this book is the liquid oil. Much of the liquid oil of the market is simply a solution of the concentrated oil in alcohol. Owing to the small yield it is exceedingly expensive and it is used sparingly in mixtures. Its odor is similar to that of violets and it is used in mixtures as a substitute for and for strengthening the natural odor of the latter.

Some oils of orris of the market are stated to be merely mixtures of cedar and other oils with true oil of orris.

Oil of Mignonette Flowers, or *Reseda*, is a dark oil and like concrete oil of orris is solid at ordinary temperatures.

Oil of Verbena is obtained by distillation of the leaves of the lemon verbenia but on account of its scarcity and high price it is almost entirely displaced by *Oil of Lemongrass*, a very similar oil.

Oil of Rosemary is of two kinds, French and Italian or, more properly, Dalmation. The former is much finer and is the higher priced.

Commercial "Oil of Jasmine," as it has appeared on the market, has been simply the alcoholic washings of jasmine pomade. True oil of jasmine is also obtainable but it is exceedingly expensive. In its place may be used the artificial or synthetic oil which is now an article of commerce. Another similar synthetic oil is *Oil of Cassie*.

TERPENELESS OILS.

The volatile oils are complex bodies, being composed of a great variety of constituents such as hydrocarbons, alcohols, aldehydes, ketones, phenols, esters and some sulfur compounds. The hydrocarbons (bodies consisting of hydrogen and carbon only) present are of the class known as terpenes, consisting of the terpenes proper, the sesquiterpenes, diterpenes, triterpenes, etc. These terpenes are characterized by lack of aroma and very sparing solubility in diluted alcohol and the ease with which they become oxidized and resinified in

the presence of air, light and moisture, while the remaining constituents are (mostly) the true odor carriers. It follows that if terpene-bearing volatile oils, which include practically all essential oils, be deprived of terpenes, the product will be greatly improved. A number of such terpeneless, or so-called concentrated, volatile oils are now commercially available.

These terpeneless oils are not readily changed upon exposure, are readily soluble in dilute alcohol, and the aroma is purer and more delicate. On account of the lower boiling point of terpenes, these are readily removed by the process of fractional distillation.

Among the terpeneless oils of the market are oils of lemon, orange, lavender, caraway, clove, anise, coriander, peppermint, sassafras, eucalyptus, etc. All volatile oils do not, however, contain sufficient terpene to make it an object to remove it. These terpeneless oils must not be confounded with the isolated oxygenated components, such as citral, for instance, which is sometimes sold as "terpeneless lemon oil."

CONCRETE OILS.

The so-called "concrete oils," also known as "concrete essences" and "concentrated flower oils" and less appropriately as "concrete perfumes," are derived, as already explained under Extraction of Flower Odors, by extraction of the flowers with a volatile solvent and subsequent evaporation of the solvent, except concrete oil of orris, which is obtained by distillation of orris root. One pound of concrete oil will often replace 100 pounds of pomade made by the enfleurage process. Among the concrete oils, other than oil of orris, which are now commercially available are those of cassie, rose, tuberose, mignonette, lilac, violet, and heliotrope. Concrete oil of orris is described under Essential Oils. These oils are not entirely soluble in alcohol, owing to the presence of waxy and fatty matters.

Owing to the highly concentrated and expensive character of these oils, they are usually placed on the market in the form of alcoholic solutions or of mixtures with wax. The latter must be treated with alcohol to extract the odorous principle.

CHEMICAL PREPARATIONS AND SYNTHETIC PERFUMES.

The chemical preparations used in perfumery manufacture, including the synthetics employed for this purpose, may be classed into those extracted or isolated from other substances such as volatile oils, and those obtained by synthesis. A familiar example of the former is menthol, of the latter, vanillin. This distinction is, however, not accurately drawn because many principles formerly obtained by separation from a mother substance are now prepared synthetically, vanillin itself being an example. Even some of the essential oils formerly obtained exclusively by natural means are now prepared artificially. The study of volatile oils in the last decade has given chemists such a knowledge of their constitution that they are able to assemble the constituents, taken from various other sources, and thus produce a duplicate of the natural perfume. Such products are the artificial oils of ylang ylang, cassie, and jasmine.

The number of synthetic perfumes is now quite great and is constantly increasing. Not only are the natural odors imitated but entirely new odor products have been made, thus greatly widening the range of possible combinations of odors.

These synthetic substances are made by processes which in most instances are secret or patented, and very frequently the same substance is known by a great variety of names, each manufacturer having a different set of names for many of his products from those used by other manufacturers.

These synthetic products are not used entirely for making perfumery and toilet articles; they are used also for making

flavoring extracts, liqueurs or cordials, and soaps. Inferiors or coarser kinds are generally employed for perfuming soap.

Artificial Musk was one of the earliest synthetic perfume products. It lacks the stability or fixing power of the natural substance, but it serves an excellent purpose and is much less expensive than true musk. It is frequently specified in perfume formulas as "musc-Baur."

Vanillin and *Cumarin* were also early products of the synthetic chemist's skill. The former is naturally present in vanilla but is made synthetically from coniferin (from pine wood) and from eugenol.

Cumarin is the active principle of tonka beans but is also present in many plants, being widely distributed throughout the vegetable kingdom (clover, deer's-tongue, woodruff, etc.). It is prepared artificially from salicylic anhydride. It has the scent of new-mown hay.

Foin Coupe, so-called, is a commercial product sold for the preparation of the scent of new-mown hay. It appears to be a mixture consisting mostly of cumarin.

Eugenol is a prominent constituent of oil of clove and is also present in the oils of bay, pimento, and sassafras. It is the starting point in one process for the manufacture of artificial vanillin and various other substances. It is now recognized in the U. S. and German Pharmacopeias.

Citral is among the best known products which are isolated from other substances. It is the active principle of oil of lemon, which for commercial purposes is derived from oil of lemon-grass which contains it more abundantly.

Geronil is a constituent present in several oils, such as oils of citronella, linaloe, verbena, rose, rose geranium, and palmarosa, and in small amounts in many other oils. For commercial purposes, it may be separated from the cheapest of these, such as oil of citron-

ella. Artificially it is prepared from citral or linalool.

Citronellol is also present in the same group of oils but these ingredients are present in different proportions and there are many other modifying constituents in the various oils to account for the differences in odor. Citronellol is made artificially from citronella, still another constituent of oil of citronella. Combinations of geraniol and citronellol have an odor of rose and are used as substitutes for oil of rose under the names *Rhodinol* and *Roseol*.

Linalool is a substance present in oils of linaloe, bergamot, neroli, lavender, thyme, and ylang ylang. It is also made artificially from geraniol and it is the source of Linalyl Acetate, the principle constituent of oil of bergamot.

What is sold in the market as *Bergamiol* is linalyl acetate.

Cinnamic Aldehyde is obtained by separation from oil of cinnamon, of which it is the main constituent. Synthetically it is prepared from a mixture of benzoic and acetic aldehydes. It is usually sold as "artificial oil of cassia" and it is purer and more reliable than the commercial oils.

The corresponding alcohol, Cinnamyl Alcohol, is a synthetic possessing the odor of hyacinths and also of the meadowsweet.

Benzaldehyde or *Benzoic Aldehyde* is another aldehyde used for perfumery and flavoring purposes. It is a substitute for essential oil of bitter almonds. It is now recognized by the U. S. Pharmacopeia.

Aubépine or *Anisic Aldehyde* is another aldehydic perfume which is made artificially from phenol and from oil of anise or its constituent anethol. It is in two forms, liquid and crystal; the former is soluble and is used in liquid perfumes, the latter is insoluble and is used in sachet powders, etc. The liquid oxidizes readily when exposed to air to anisic acid and therefore should be kept in well-closed bottles. It has the odor

of the hawthorn and may-blossom. A similar synthetic product is known as *Crategine*.

Ionone is probably the most interesting synthetic product used in perfumery. It is made from citral and acetone and is marketed in the form of a 10% solution. It is used as a substitute for oil of orris and its active principle irone.

Ionarol is a very closely related product, and *irone* is also an article of commerce. These substances are used for making violet perfume but alone they do not possess the requisite "body" and require fortification with violet pomade washings and oil of orris.

Heliotropin or *Piperonal* is a crystalline substance made from piperine, also by oxidation of safrol, which is contained in oils of sassafras and camphor. On account of not keeping well, it should be dissolved when fresh in alcohol and the solution should be kept in a cool, as well as a dark, place. It has the odor of heliotrope.

œillet is a name applied to Artificial Carnation; it is chemically Isoeugenol, a derivative of eugenol. It is a thickish, yellow liquid, and is used for preparing carnation scent.

Perfumes possessing the *clover* or *trefle* odor have become very popular. These are made with Amyl Salicylate as a base, which is known commercially by such names as Trefol, Orchidol, and Trecarnol.

Terpineol or *Lilacine* is prepared by the action of dilute sulfuric acid upon terpin hydrate. It appears in two forms, a liquid and a semi-solid, of which the former is the finer. It has the odor of lilacs and it also recalls the odor of elder flowers and hyacinths. It is frequently of poor quality.

What is sold as *Muguet* or *Oil of Muguet* is terpineol mixed with smaller quantities of other ingredients.

A synthetic of importance is *Methyl Anthranilate*, which is made by a secret process. It has an odor resembling oil of orange flowers but a real Artificial

Oil of Neroli is also obtainable. The component parts are kept secret but probably consist of methyl anthranilate, geraniol, geranyl acetate, linalool, linalyl acetate, limonene, and indol.

Bromelia and *Yara* are two similar compounds used in perfumery (mostly for soaps), the former being the ethyl ester, the latter the methyl ester, of betanaphthol. The former has an odor recalling cassie flowers, the latter the odor of orange blossoms.

Artificial Oil of *Jasmin* is also a perfect reproduction of the natural oil. In this case, as in that of Neroli for Orange Blossoms, it was only necessary for the chemist to discover the component parts of the natural oil and then to combine these constituents (taken from other sources). For example, oil of jasmine was found to have the following percentage composition:

Benzyl acetate	65.5
Benzyl alcohol	6.0
Methyl anthranilate	0.5
Linalool	15.5
Linalyl acetate	7.5
Jasmone	3.0
Indol	2.5

The chemist has only to make and mix these constituents in his laboratory to reproduce the pure oil.

Practically this oil is said to be made from the following mixture:

Benzyl acetate	parts 55
Benzyl alcohol	parts 20
Linalyl acetate	parts 15
Linalool	parts 10

The artificial oil is cheaper than the natural because of the scarcity of the flowers, and is also considered superior because it is always uniform and has not been altered by distillation or any process requiring heat.

Ylang Ylang, produced artificially in the synthetic form, is considered superior to the natural product because it is always uniform and much less expensive.

What is called *Oil of Niobe* is chemically Methyl Benzoate. It is described as a liquid of a pleasant odor.

What has been sold as "*artificial oil of lemon*" was found to be merely an alcoholic solution of citral obtained from lemongrass oil, sometimes with a little real oil of lemon added to it. On account of the multiplicity of the newer perfume products it has been possible to exploit some fake substances and it behooves the manufacturer of perfumes to be on his guard in purchasing his supplies. What has been sold as "*iri-sol*" for the manufacture of violet perfume was found to consist of 2½% of concrete oil of orris and 97½% of acetanilid.

A number of other "fake" perfume products have been exposed, viz.:

Ambrettaria was found to be a mixture of 1 part of musk-seed (ambrette) oil, 19 parts of acetanilid, with traces of artificial musk.

Oil of Catalpa; terpineol with a little added oil of ylang ylang.

Oil of Narcissus; a by-product in the manufacture of terpineol. It was offered for making the scent of narcissus.

Oil of Ylang Ylang was found to be cananga oil with a little added oil of Peru balsam.

There are also synthetic substitutes for musk, civet and ambergris, which will be referred to later.

ALCOHOL.

A vehicle is required to hold the delicate floral oils and other odorous principles and none has proved more satisfactory than ethyl or grain alcohol. It volatilizes readily yet not too rapidly, it is a solvent of a wide range of power and is entirely unalterable or non-decomposable. Its slight odor is its only objection as the ideal vehicle for perfumery purposes is entirely inodorous. It is sometimes impure, due to the presence of fusel oil, furfurol and other odorous contaminations which would modify or destroy the delicate fragrant odors which are the main ingredients of fine perfumes. The best kind of alcohol is what is known as "deodorized alco-

hol." Another grade of alcohol which is fairly good is what is sold as "cologne spirit," which is the "middle run" obtained in the manufacture of ordinary alcohol, and is fairly free from fusel oil.

The difference between ordinary alcohol and purified alcohol can be determined very easily by rubbing a few drops between the hands and allowing the alcohol to evaporate entirely; a residuary odor remains in the case of ordinary alcohol, which is quite marked and very pungent and objectionable. The alcohol should also be of full strength for perfumery purposes as a weak spirit will dissolve oils imperfectly.

Many methods for deodorizing alcohol have been recommended but the following will be found satisfactory:

A convenient amount of alcohol is shaken with powdered potassium permanganate until it assumes a decided color. Then allow to stand for several hours until the permanganate has become decomposed, and brown manganese dioxid has deposited. A pinch of pulverized calcium carbonate should then be added and the whole subjected to distillation, using a well-cooled receiver. Distil very slowly at first, testing the distillate frequently, until a mixture of the distillate and a strong (syrupy) solution of pure caustic soda or potassa, in the proportion of 10 of the former to 1 of the latter, gives no perceptible yellow coloration, on standing for 20 minutes or half an hour. The first portion of distillate that yields this coloration should be rejected; the last one-eighth of liquid should not be distilled and should also be rejected. The remaining portion only is adapted for use.

Another excellent means of deodorizing is by adding 1 to 1½ drams of sodium peroxid to a gallon of alcohol, allowing to stand 24 hours, agitating occasionally, and then carefully distilling.

To avoid the deodorization of alcohol with its consequent bother and loss by distillation, as well as to overcome or

subdue its natural odor, it has been suggested to treat in other ways or to make various additions. The following have been suggested:

I.

Alcoholgall. 1
Quicklime, in powder.....dr. 4
Alum, powderdr. 2
Spirit of nitrous ether.....dr. 1

Mix all together, shake thoroughly, set aside for 7 days, agitating occasionally, and filter.

II.

Alcoholgall. 1
Animal charcoalav.oz. 2
Spirit of nitrous ether.....m. 30
Oil of nutmeg.....m. 30
Cumaringr. 20
Vanillingr. 10
Tincture of Siam benzoin..fl.oz. 1

Macerate the alcohol with charcoal for at least 7 days, agitating frequently, filter through talcum, and then add the other ingredients.

The latter combination is said to blend and sweeten the odorous constituents of perfumes, and at the same time serves as a "fixing" agent.

Slightly different is the following, which has also been highly recommended:

Cumaringr. 5
Vanillingr. 10
Spirit of nitrous ether....fl.dr. 4
Tincture of benzoin.....fl.oz. 4
Glycerinfl.oz. 8
Alcoholgall. 1

Wood or methyl alcohol in a highly purified form has been suggested as a vehicle for perfumes but it has a stronger and more persistent odor than pure ethyl alcohol and its poisonous character renders it entirely unfit for this purpose.

AROMATIC WATERS.

Orange flower and rose waters are frequently employed in perfumes as a solvent or diluent. Only the best imported full-strength "triple" water should be used for fine handkerchief extracts. If plain water is required, distilled water only should be used.

SOLID SUBSTANCES USED IN PERFUMERY.

A number of interesting and important solid substances are used in making handkerchief perfumes, toilet waters, sachet powders and fumigating powders. The most important, interesting and valuable of these are the substances of animal origin, *Musk*, *Ambergris* and *Civet*, which are used mainly in the manufacture of handkerchief perfumes. All three have an intense and repulsive odor but they are used generally not for their own odor but for their peculiar property of imparting persistency, *i. e.*, "fixing" the fugitive flower-odors and making them permanent. For this purpose only very small amounts are required. Owing to their expensive character and the difficulty of detecting impurities, they are subjected to the grossest adulteration and the utmost care must be exercised to obtain the purest product.

Musk is the most extensively employed of the three animal substances mentioned. There are two principal varieties, the *Tonquin*, or so-called *Thibetan* or *Chinese*, and the *Russian* or *Siberian*. It comes into the market in two forms, pods and "grain," both of which are adulterated sadly and in diverse ways. The first form is the pods as they are removed from the animal, the musk deer, but it is not practicable for ordinary dealers to buy this form. It is frequently adulterated with lead or pieces of stone to increase the weight.

"Grain musk" is the dried secretion of the musk sac in a granular form, whence the name. It is adulterated with pieces of dried liver, dung and other animal matter, and sometimes it consists almost entirely of foreign animal matter with a little musk added to impart an odor. It may be obtained at any price according to the degree of adulteration. It should be purchased from responsible dealers who are willing to furnish a guaranty.

The odor of musk is subdued or modified by camphor, acids, various essen-

tial oils, etc., and is intensified by small amounts of alkali. There are other substances which have a musk-like odor such as the secretion of the musk rat, also musk (or sumbul) root and musk seed. The latter is used in perfumery and will be referred to later; musk root is employed only for medicinal purposes, and the musk rat secretion has been experimented with for perfumery purposes but has never gained favor.

Ambergris, so-called from its fancied resemblance to amber, is a disease excretory product derived from the intestines of the sperm whale. It is found floating on the surface of the ocean.

Civet is a secretion derived from the civet cat, an animal found in North Africa and East India. It is obtained mostly from India, where the animal is kept in captivity to obtain this secretion.

All three animal substances yield their virtues to alcohol. To facilitate extraction they should be first triturated with at least an equal amount of finely granulated orris root.

Musk, ambergris and civet are now frequently replaced by synthetic products called *Artificial Musk*, *Ambrol* and *Artificial Civet* (or Civetol), but which are not artificial products in the sense that artificial oils of jasmine and ylang yland are exact substitutes for the natural oils, but are synthetic chemicals having an odor similar to the natural products.

Artificial Musk, also called Musc-Baur and Tonquinol, is chemically, trinitrobutyl-xylene. It is in white or yellowish crystals which are soluble in alcohol and have a strong musk-like odor. This is sometimes replaced or substituted by inferior substances.

Musk Seed, also called abelmoschus or ambrette seed, is derived from a plant grown in Egypt and India. It has an appearance similar to flaxseed and is of a strong musk-like odor. It is used in

the form of an alcoholic tincture. An oil, called Oil of Ambrette, is obtained from it by distillation.

A number of resinous substances are used in perfumery, such as benzoin, storax, myrrh, tolu, and Peru balsam. Only the best kinds should of course be employed. Benzoin and myrrh should be used in the whole form, which is to be reduced to coarse powder as required; the commercial fine powder is unfit for any purpose whatever. The variety of benzoin known as Siam is the kind that should receive preference. In handkerchief perfumes and toilet waters these resinous substances are used in the form of alcoholic tinctures. In the dry form they are used in sachet powders and other solid perfumes.

Orris Root is a very important substance used in perfumery products. There are two principal kinds, Florentine and Verona, the former being preferred. It is generally employed in the granulated form or about No. 40 powder for sachet powders, which form is also suitable for making tinctures to use in handkerchief perfumes and toilet powders.

Tonka and *vanilla beans* are also used in perfumes in the form of a tincture. As usual, only the best kinds should be employed. Other solid substances, such as lavender flowers, cloves, orange peel, etc., are used mostly in making sachet powders and will be referred to under this latter heading.

COLORS FOR PERFUMERY.

In perfumes the appearance next to the odor plays an important part, and hence it is essential to tint this class of articles properly. Any accidental color present is an obstacle as it would cause stains on the fabrics upon which they are used. Hence the aim is to obtain perfumes either colorless or at the most of a very pale tint, pale green, for example, being common, the latter being of such a character that it disappears on

drying. *Essence of cassie and violet* possess this color and in many cases one of these essences is added to perfumes with the view of imparting this desirable color. Sometimes a small amount of an aniline dye is used, but this may be objectionable either because of leaving a stain on the fabric or because of fading out on exposure of the perfume to light.

The most usually employed green color is *chlorophyll*, using the so-called alcohol-soluble kind. Very little of this is required and it is resistant to light. A mixture of potassium chromate and copper sulfate is said to make a satisfactory tint which is very resistant to light. An acceptable green coloring agent for white rose extract is a tincture of patchouly made in the proportion of 1 part of the leaves to 4 parts of alcohol.

Most perfume mixtures are of a pale brownish tint, especially if they contain resinous bodies like benzoin, storax and Peru balsam, but if a somewhat darker brown shade is demanded it may be imparted by means of rhatany root or the tincture. Red saunders gives a reddish brown color.

A red color may be imparted by means of carmine in solution, using the solution of carmine of the National Formulary. Only a very small amount is required. Or use Cochineal Color of the N. F. or a hydroalcoholic tincture of cochineal.

A yellow color may be imparted by means of saffron or curcuma, only small amounts being required. Essence of jonquille also imparts a yellow tint and may be added to perfume mixtures to obtain this shade.

As stated, however, the perfume is commonly allowed to retain its natural color which is usually a pale brown or it is colored greenish, and only very small amounts of tinting material should be used to avoid staining the handkerchief or dress upon which the perfume is used.

COMPOSING OF PERFUMES.

Despite the manufacture of the numerous modern perfume products of the chemist's laboratory, the natural odors of the flower garden are still the requisites in the making of fine perfumes.

The eight fundamental odors, according to an authority, are Rose, Violet, Tuberose, Jasmine, Cassie, Mignonette, Jonquille and Orange Flowers.

This does not exhaust the list of flower odors nor does it take account of other natural odors derived from leaves, roots, woods, etc., nor of those synthetic odors which are not imitative of flower odors.

With these basic odors it is claimed to be possible to produce the long list of standard perfumes by varying the proportions and adding other modifying ingredients, the necessary balsamic, fruit or spice odors, to impart the individual characteristics. These basic odors consist either of pomade washings or of essential oils, or possibly of both, but they are now frequently replaced, in part only as a rule, by the corresponding synthetic compounds or mixtures. The synthetic perfume products have the fault of "thinness," that is, are lacking in "body," so that it is impossible to use them alone in building up or composing a fine perfume.

It seems a singular fact that it is impossible to produce satisfactory flower odors by simply extracting the flowers themselves.

The pomade washings or essential oils derived from these flowers are, like the synthetic perfumes, lacking in "body" and need fortification. The natural products and the synthetics are now usually employed in conjunction, each one imparting strength and stability to the other.

Flower odors like the rose and violet are made from the oils or pomade washings of these flowers but there are other flowers, such as lilac, crabapple, and heliotrope, of which there are no corre-

spending oils or pomade washings and the odors must be made or imitated by mixing various oils, pomade washings and synthetics. Very excellent imitations indeed have been worked up by skillful perfumers.

There are also many perfumes manufactured which have no counterpart in the flower garden, orchard or spice grove, but are nevertheless pleasing combinations, and have achieved great popularity. Such are Jockey Club, Millefleurs, Frangipanni, Mousseline, "Ocean Spray," "Upper Ten," "West End," etc. These mixtures are in perfumers' parlance designated as "bouquets." Many of the most popular and expensive perfumes of the present time are bouquet odors. It would not be possible to make the vast array of these new and exquisite creations without the numerous synthetic perfume products.

A really elegant perfume should have the properties of agreeability, intensity and persistency.

Agreeability is secured by judicious combination of ingredients, such as mixing substances that fortify each other or that are complementary to each other, or modifying excessively sweet odors with aromatics, or toning down aromatic odors with sweet ones.

Intensity is secured by not adding too great a proportion of the vehicles, alcohol and water, also by fortification of the "weaker" or "thinner" odors with stronger ones.

Persistency is usually imparted by adding small amounts of certain substances of a strong odor, known as fixateurs or "fixing agents" which hold or "fix" the perfume when exposed on a handkerchief. Intensity is secured by about the same agents as impart persistency, musk and civet among animal substances, artificial musk among synthetics, and oils of patchouli and santal and balsamic tinctures among vegetable products.

A satisfactory rose perfume, for example, cannot be obtained by dissolving

oil of rose in alcohol or by washing rose pomade. The perfume would lack intensity and persistency; fortification with other agents is necessary to secure these, and these agents, judiciously selected and sparingly added, modify the odor so as to produce the different shades of rose odor which are so familiar to us.

In the case of artificial odors, or "bouquets," an agreeable perfume is made by blending the constituents in such a manner that no special odor is recognized. There should be sweetness and agreeability but not oppressiveness.

The following table is an interesting one as showing the relationship between the different odors:

weeks at least) to allow it to "ripen" or blend, after which it may be filtered.

If the ingredients of handkerchief extracts be classified according to their function, the classification would be as follows: (1) Odorous agents; (2) fixing agents, and (3) vehicle.

The essential odorous agents are the essences, spirits or oils, and chemical substances.

The "fixing" agents consist of the musk, ambergris, civet, resins, orris, oils of ylang ylang and patchouli, etc. The distinction between the first and second classes is not sharply drawn, for the reason that some of the "fixing" agents are used for their odor as well as for their "fixing" properties. The third

Classification of Odors.

Classes.	Types.	Odors Belonging to the Same Class.
Rose	Rose	Geranium, sweet brier, rosewood.
Jasmine	Jasmine	Lily of the valley, white pond lily, ylang ylang.
Orange flower ..	Orange flower ..	Cassia, syringa, orange leaves.
Tuberose	Tuberose	Lily, jonquille hyacinth.
Violet	Violet	Orris root, mignonette.
Balsamic	Benzoin	Balsam of Peru, tolu, benzoin, storax.
Vanilla	Vanilla	Tonka.
Spice	Cinnamon	Nutmeg, mace, pimento.
Clove	Clove	Carnation, clove pink.
Camphor	Camphor	Rosemary, patchouli.
Sandal	Sandalwood	Vetiver, cedarwood.
Citrine	Lemon	Bergamot, orange, cedrat, lime.
Herbaceous	Lavender	Thyme, marjoram, wild thyme.
Mint	Peppermint	Spearmint, balm, rue, sage.
Anise	Aniseed	Caraway, dill, coriander, fennel, star anise.
Almond	Bitter almond ..	Peach kernels, cherry-laurel.
Musk	Musk	Civet, musk-seed, sumbul, ambergris.
Fruit	Pear	Apple, pineapple, quince.

HANDKERCHIEF EXTRACTS.

(General Remarks.)

Handkerchief extracts, or "extracts," as they are more commonly termed, are produced by incorporating with alcohol one or more essences (see definition of term below), one or more spirits (alcoholic solutions of volatile oil) or possibly the oils themselves, and a tincture of some of the animal or resinous substances mentioned above. Most generally now other ingredients are added, such as one of the synthetic perfumes, which really takes the place of the volatile oil or spirit. This mixture should be set aside for some time (several

class practically embraces but one substance, viz., alcohol, although rose and orange flower water are sometimes added after the alcohol, and may therefore also be considered as vehicles.

The office of "fixing" agents is chiefly to hold the perfume to, or fix, or fasten it upon, the handkerchief or other fabric to which it is applied, it being understood that the odoriferous matters all being very volatile and exceedingly evanescent when exposed to the atmosphere. The "fixing" agents also serve to hold or secure the delicate flower odors to the vehicle while the mixture is still present in the container as "extract." These substances there-

fore allow the perfume to be exhaled or emitted very slowly, in this wise resembling the exhalation of the odor from flowers.

The "fixing" agents are of five varieties, as follows:

1. Fatty matter derived from pomades during extraction with alcohol.

2. Resinous substances, such as Peru balsam, tolu, storax, benzoin, orris, musk-seed, etc., and even myrrh, asa-fetida, etc., have been employed.

3. Volatile oils of the type like oils of sandalwood, patchouli, ylang ylang, and vetiver.

4. Animal substances, which include musk, ambergris, and civet.

5. Synthetics, viz., artificial musk and artificial civet.

The objection to the first class is that it soon decomposes and imparts a rancid odor to the perfume, hence pains are taken to exclude rather than to retain it. How this may be done is described under the heading of Essences.

Milk has been suggested as a "fixing" agent. When used it is to be added, preferably first warmed, in the proportion of 1 ounce to a gallon of handkerchief extract. Smaller amounts of milk would be needed when used for weaker perfumes. The butter fat is the constituent of milk that acts as the fixative.

The objection to the resinous class is but an æsthetic one and hence is less serious than in the preceding. The resins impart a high color to the perfume and when the latter is dropped on a white handkerchief the fabric at once presents a soiled appearance. This is one reason why benzoin is often replaced by benzoic acid obtained by sublimation of the resin. Orris does not have the objection of imparting a high color, but the amount of resinous matter is so small that a very concentrated alcoholic tincture must be employed. Of course, all resins are objectionable because of their own odor, which may perceptibly modify the other odors, and

this is sufficient reason why different resins are selected for different perfumes.

The volatile oils used as fixing agents are of the kind having a "heavy," instead of a sweet or aromatic odor. They are used in small amounts only.

The animal class of "fixing" agents is remarkable in that but trifling amounts will serve the purpose, and hence they are the most largely employed. The one objection to their use is their pronounced and very persistent odor, which is likely to remain after the other odorous substances have dissipated.

The most modern "fixing" agents are of course artificial musk and artificial civet, the former being quite largely used. These substances have the advantage of being colorless, entirely soluble and of uniform composition.

A convenient and popular, though indefinite, classification of "extracts" is into "delicate odors" and "heavy odors," the former including such as violet, heliotrope, lilac, etc., the latter musk, jockey club, etc.

PRESERVATION OF PERFUMES.

All perfumes, but particularly the "extracts," containing, as they do, readily decomposable essential oils, should be properly cared for if they are to retain their pristine freshness of odor and of color. The most damaging agent is light, especially strong sunlight, causing some colors to fade, others to darken, and modifying or destroying odors.

The stock of perfumery should therefore be displayed rather at the rear half of the store instead of in front where the sun's rays may have ready access to it. Owing to the deleterious effects of strong light, manufacturing perfumers use large labels on their bottles and some even go so far as to have a closely adherent wrapper for the bottle, the label being on the outside of this wrapper.

The room for the storing and the location of the display of perfumes

should be of a moderate and also of a fairly even temperature, not subject at least to extremes of cold and heat. The former is liable to cause temporary separation of essential oils and other ingredients, from the alcoholic solution, the latter hastens oxidation and produces permanent injury. This is another reason for displaying perfumes away from the front part of the store where the heat of the sun's rays may reach them. Locations near heaters or registers should also be avoided.

Excessive exposure to air is also prejudicial to perfumes. For this reason, they should be displayed in bottles no larger than 8 ounce which should be well-stoppered, preferably with a glass stopper. It may even be advisable to have a number of small bottles in a display rack to avoid using the larger bottles except in cases of a sale.

Resinous and oily portions of perfumes prone to collect on the lips of the bottles and on adjacent portions of the stoppers, and these portions oxidize through contact with the air, and in this wise, patrons may get an erroneous impression of the odor. The lips and stoppers of bottles should therefore be cleaned frequently, wiping with a little alcohol on a cloth if necessary.

DISPLAYING OF PERFUMES.

From what has been stated in previous paragraphs it may be gathered that in choosing a location in the store for the effective display of perfumes, more than appearance must be had in mind. While the goods should be effectively and tastily displayed, they should not be subjected to excessive light nor to extremes of temperature.

The number of odors carried in stock should not be too great but of course sufficiently varied to suit all tastes. Sometimes it may be necessary to carry cheaper as well as higher-priced odors of the same kind to meet the limitations of some purses.

A common practice in showing these goods to prospective customers is to remove the stopper from the stock bottle, and allow the customer to smell directly from the latter. The vehicle alcohol being more volatile than the oils and other ingredients which form the real perfume, obtrudes itself upon the olfactory nerves and crowds away, as it were, the more delicate odors. The proper method of showing the "extracts" and indicating the differences between them is to wet the stopper by inverting the bottle, then to moisten a strip of blotting paper or a piece of rice (cigarette) paper, allowing the latter to become almost dry before handing to the patron.

Another good suggestion is to have a small sample rack of perfumes containing a number of glass-stoppered half or one ounce bottles; this will enable the pharmacist to keep the stock bottles in a dark place to be opened only when an "extract" is to be dispensed. The sample rack may also be kept in a dark place when not in use. If the glass stoppers of the bottles of the rack are of the elongated kind, so as to reach to the bottom of the bottle, the tissue or rice paper may be dispensed with.

In showing "extracts," for purposes of sale, the order in which they are shown is also a matter of consequence, especially when the prospective customer does not have any preferences. The finest, most delicate odors should always be shown first; if the heavy odors be presented first, the olfactory nerves will have become so impressed with the latter that the delicate odors which are shown subsequently will appear to be decidedly lacking in quality, and thus a sale may be lost.

The sale of "mixed odors," that is, a mixture of two or more "extracts," should be discouraged because each "extract" is a harmonized blending of odors, and mixing "extracts" is liable to destroy this harmony. However, this mat-

ter may not be of such great consequence, because those that ask for "mixed odors" do not properly appreciate the value of a well-made "extract."

ESSENCES.

Essences (extracts, extraits and esprits, they are also termed) are prepared, as already stated, by extraction of the odorous substances from pomades by means of alcohol, this process being known generally as "washing." The best method of washing is as follows:

Sixteen av. ounces of the pomade, using a No. 24 or 30, are cut into small pieces and placed in a bottle of sufficient capacity, such as a fruit jar, in which is put 16 fluidounces of pure alcohol. Place the bottle, suitably stoppered, in a water bath, and apply heat sufficient to barely melt the pomade, shake well together, and repeat the shaking frequently until the fatty matter solidifies. In this way the pomade will be reduced to a finely divided or granular state, permeated thoroughly by the alcohol. Allow this to stand for a week—a month or even longer would be better—giving it an occasional shake, then drain off the liquid into another bottle; if this fall short of 16 fluidounces, repeat the operation with a sufficient quantity of alcohol to make up to this measure. To remove the fatty matter this liquid should be placed on ice till well chilled after which it is strained.

By subsequent and similar treatment, a second and even a third quantity of essence may be made, which, although much weaker, will be found useful in the preparation of colognes and toilet waters. Some operators use the third essence for washing a new quantity of original pomade, thus making a stronger essence or enabling one to use a weaker pomade. The residual pomade may be utilized for making hair pomades or as a diluent for ointments, or for making fine soaps (by manufacturers).

Essences prepared by the above method contain some fatty matter and

will soon become rancid. This retained fatty matter can be separated by the application of cold, and in order that it may be adopted in preference to the preceding one: Into an ice cream freezer of a size commensurate with the quantity of essence to be prepared, pour the requisite quantity of alcohol, then heat the pomade cautiously upon a water bath until melted, pour this into the freezer, put on the cover, set the apparatus in motion and continue the heating for 15 or 20 minutes, by which time probably all the odorous matter will have been extracted. Now surround the can with a freezing mixture, composed of ground rock salt and cracked ice, resume the beating until the liquid is thoroughly chilled and the fat has all adhered to the paddle and the sides of the can. Then open the freezer, pour off the liquid, and pass through a well-covered filter to separate the particles of fat still suspended in the liquid.

As already stated, the essence used are rose, jonquille, cassie, reseda, jasmine, violet, tuberose, and orange flower. Formerly the washings of the pomades of these flowers were considered indispensable for the making of fine perfumes, but at the present time the practical manufacturer is quite likely to replace them with alcoholic solutions of the concrete oils.

The full strength oils must be used, not any dilutions with wax or solutions in alcohol. The proportions used are one ounce of oil to one gallon of alcohol. The oil should be first triturated with a small amount of alcohol, to break up the lumps then the remainder of the alcohol added, the whole set aside for 24 hours, during which it should be frequently agitated, and finally filtered. This has about the same strength as a first pomade washing and may be used in place of the latter. The residue on the filter may, like the pomades, be subjected to a second and even a third washing.

The advantage of using these oil solutions are many. The pomade washings can never be entirely freed from fatty matter and there is a great deal of tedious manipulation to thoroughly extract the pomade, as well as considerable loss of alcohol during manipulation.

SPIRITS.

The formula here given are for those spirits which are used in the making of perfumes mentioned in this work. Only the very best quality of oil should be used and only the best obtainable alcohol. A full description of the oils will be found under the heading Essential Oils. It is said that the longer these spirits are allowed to stand, i. e., the older they are, the better they are adapted for perfumery purposes.

Spirit of Almond.

Oil of bitter almond.....m. 80
Alcoholfl.oz. 16

Spirit of Ambrette.

Oil of ambrette.....fl.dr. 2
Alcoholfl.oz. 8

Spirit of Bergamot.

Oil of bergamot.....fl.oz. 1
Alcoholfl.oz. 15

Spirit of Cedarwood.

Oil of cedar (Lebanon)....fl.dr. 4
Alcoholfl.oz. 9½

Spirit of Cinnamon.

Make from 1 fluidounce of oil of cinnamon (Ceylon) and 9 fluidounces of alcohol.

Spirit of Clove.

Oil of clove, Bourbon.....fl.dr. 4
Alcoholfl.oz. 15½

Spirit of Hyacinth.

Hyacinthingr. 60
Alcoholfl.oz. 16

Spirit of Lavender.

Prepare from 1 fluidounce of oil of lavender flowers and 19 fluidounces of alcohol, using the Mitcham oil of lavender.

Spirit of Lemon.

Prepare from 1 fluidounce of oil of lemon and 19 fluidounces of alcohol.

Spirit of Lemon-Grass.

Oil of lemon-grass.....fl.oz. 1
Alcoholfl.oz. 15

Spirit of Linaloe.

Oil of linaloe.....fl.dr. 1¼
Alcoholfl.oz. 8

Spirit of Lilac.

Terplneol or lilacin.....dr. 2
Alcoholfl.oz. 8

Spirit of Neroli.

Oil of neroli petale.....fl.dr. 4
Alcoholfl.oz. 15½
Artificial oil of neroli may be substituted for the natural oil.

Spirit of Nutmeg.

Make from 1 fluidounce of oil of nutmeg and 19 fluidounces of alcohol.

Spirit of Orange.

Prepare 1 fluidounce of oil of orange and 19 fluidounces of alcohol.

As stated in the introductory remarks on perfumes, the oil of bitter orange peel is to be preferred.

Spirit of Orris.

Oil of orris, liquid.....fl.dr. 1
Alcoholfl.oz. 8

Spirit of Patchouly.

Oil of patchouly.....fl.dr. 4
Alcoholfl.oz. 15½

Spirit of Pimento.

Oil of pimento.....fl.oz. 1
Alcoholfl.oz. 15

Spirit of Rose.

Oil of rose.....fl.dr. 4
Alcoholfl.oz. 7½
Artificial oil of rose may be used instead of the natural oil.

Spirit of Rose, Compound.

Spirit of rose.....fl.oz. 2
Spirit of rose geranium.....fl.oz. 2
Alcoholfl.oz. 4
Or mix
Oil of rose.....fl.dr. 2
Oil of rose geranium.....fl.dr. 1
Alcohol, to make.....fl.oz. 16
The oil of rose geranium is added to give permanence to the spirit.

Spirit of Rose Geranium.

Oil of rose geranium.....fl.dr. 4
Alcoholfl.oz. 15½

Spirit of Sandal.

Oil of sandalwood, East
Indiaf.dr. 2
Alcohol, to make.....f.oz. 16

Spirit of Vetivert.

Oil of vetivert.....f.dr. 1
Alcoholf.oz. 8

Spirit of Ylang Ylang.

Oil of ylang ylang.....f.dr. 3
Alcoholf.oz. 16

The artificial oil may be used instead of the natural.

TINCTURES.

The formulas here given are for the tinctures used in making the perfumes mentioned in this work. It is said that the older these tinctures are, the better they the adapted for making perfumes.

Tincture of Ambergris.

Ambergrisdr. 2
Orris root, powder.....dr. 2
Alcoholf.oz. 16

Rub the ambergris and orris in a mortar, until reduced to a fine powder; transfer to a bottle, and add the alcohol. Macerate for 30 days, agitating occasionally, and filter through paper.

Tincture of Ambrette.

Musk seed.....av.oz. 4
Alcoholsufficient

Reduce the drug to fine powder, and extract by slow percolation so as to obtain 16 fluidounces of product.

Tincture of Siam Benzoin.

Siam benzoin, fine powder.av.oz. 2
Alcoholf.oz. 16

Mix, macerate for 7 days, agitating occasionally, and filter.

Tincture of Civet.

Civetdr. 1
Orris root, powder.....dr. 1
Alcoholf.oz. 16

Proceed as with tincture of ambergris.

Tincture of Artificial Civet.

Artificial civet.....av.oz. 1
Alcohol, to make.....f.oz. 16
Mix, dissolve and filter.

Tincture of Musk.

Musk, grain.....dr. 2
Orris root, granular.....dr. 2
Lime water.....f.oz. 4
Alcoholf.oz. 12

Rub the musk thoroughly with the orris, then with the lime water, previously warmed, macerate in a covered mortar for 2 hours, add the alcohol, transfer to a bottle, cork tightly, macerate for 30 days or longer, preferably in a rather warm place, agitate frequently, and finally filter.

Tincture of Artificial Musk.

Artificial musk.....dr. 2
Alcoholf.oz. 16
Mix and dissolve.

Tincture of Orris, Stronger.

Orris root, powder.....av.oz. 8
Alcoholsufficient

Extract the drug by slow percolation so as to obtain 16 fluidounces of product.

Tincture of Orris, Weaker.

Orris root, powder.....gr. 600
Alcohol, to make.....f.oz. 16

Prepare like the preceding.

Tincture of Storax.

Storaxav.oz. 1
Alcohol, to make.....f.oz. 16

Mix, macerate for 14 days with occasional agitation, and filter.

Tincture of Tolu.

Prepare from 1 $\frac{3}{4}$ av. ounces of tolu and enough alcohol to make 16 fluidounces.

Tincture of Tonka.

Tonkaav.oz. 3
Alcoholsufficient

Reduce the bean to moderately fine powder, add 16 fluidounces of alcohol, macerate for 14 days, agitating occasionally; filter, and add enough alcohol through the filter to make 16 fluidounces of product.

Tincture of Vanilla.

Vanillagr. 480
Sugar (granulated or rock
candy)gr. 480
Alcoholf.oz. 16

Cut the drug into small pieces, beat with the sugar in a mortar until reduced to coarse powder, macerate with the alcohol for 30 days, and filter.

HANDKERCHIEF EXTRACTS (Formulas).

It is quite essential that the amateur manufacturer of "extracts" very carefully peruse the preceding pages to inform himself upon the varieties of materials used in perfumes, the method of preservation, etc.

It may be stated that the "extracts" can be cheapened by the use of weaker pomades or inferior oils, or of a tincture of musk of one-half the strength given, by the substitution of civet for the ambergris, by the addition of larger proportions of alcohol and of some water, etc.

Acacia Extract.

Essence of cassie.....	f.oz. 4
Stronger tincture of orris.....	f.oz. 2
Tincture of vanilla.....	f.dr. 12
Tincture of ambergris.....	f.dr. 4
Alcohol	f.oz. 8½

Alisma Extract.

Essence of rose.....	f.oz. 3½
Essence of jasmine.....	f.oz. 3½
Essence of violet.....	f.oz. 3½
Essence of jonquille.....	f.oz. 3½
Tincture of ambergris.....	f.oz. 1
Tincture of musk.....	f.oz. 1

Ambergris Extract.

Compound spirit of rose.....	f.oz. 3
Tincture of ambergris.....	f.oz. 8
Tincture of musk.....	f.oz. 4
Tincture of vanilla.....	f.oz. 1

Azalea Extract.

Vanillin	dr. 3
Heliotropin	m. 25
Oil of neroli, synthetic.....	m. 25
Tincture of musk.....	f.oz. 1
Essence of rose.....	f.oz. 10
Essence of violet.....	f.oz. 10
Essence of tuberose.....	f.oz. 10
Gum benzoin, Siam.....	av.oz. 2
Alcohol	f.oz. 4

Mix, macerate for a week or two, agitating frequently, and filter.

The benzoin should be freshly powdered.

Cherry Blossom Extract.

Aubepine	drops 3 to 10
Anethol	drops 1
Oil of bitter almond.....	m. 15
Oil of fennel.....	m. 15
Oil of bergamot.....	m. 15
Oil of neroli.....	m. 75

Acetic ether.....	m. 45
Vanillin	gr. 30
Cumarin	gr. 5
Tincture of musk.....	f.dr. 6
Tincture of Siam benzoin.....	f.oz. 2½
Tincture of orris, stronger.....	f.oz. 8
Essence of rose (3rd washing)	f.oz. 15
Alcohol	f.oz. 4

Clove Pink Extract.

Essence of rose.....	f.oz. 6
Essence of cassie.....	f.oz. 4
Essence of orange flowers.....	f.oz. 4
Tincture of vanilla.....	f.oz. 2
Oil of clove, Bourbon.....	drops 10

Clover (Japan) Extract.

Essence of cassie.....	f.oz. 10
Spirit of rose.....	f.oz. 4
Tincture of musk.....	f.oz. 3½
Tincture of artificial musk.....	f.oz. 4
Solution of ionone, 10%.....	f.dr. 3
Oil of bergamot.....	f.dr. 2
Oil of petitgrain.....	f.dr. 1
Oil of clove.....	f.dr. 1
Cumarin	gr. 20
Alcohol	f.oz. 13

Cosmos Bouquet Extract.

Essence of jasmine.....	f.dr. 6
Oil of bergamot.....	f.dr. 3
Oil of lemon.....	drops 15
Oil of lavender, Mitcham.....	drops 9
Oil of clove, Bourbon.....	drops 3
Cumarin	gr. 3
Heliotropin	gr. ½
Tincture of civet.....	f.dr. 1½
Weaker tincture of orris.....	f.oz. 15
Mix and dissolve.	

Crab-Apple Flowers Extract.

I.

Essence of violet.....	f.oz. 4
Essence of rose.....	f.oz. 2
Essence of jasmine.....	f.oz. 1
Essence of cassie.....	f.oz. 1
Spirit of ylang ylang.....	f.dr. 6½
Spirit of linaloe.....	f.oz. 1½
Spirit of neroli.....	f.dr. 2½
Compound spirit of rose.....	f.dr. 4
Spirit of hyacinth.....	f.dr. 2
Tincture of musk.....	f.dr. 1
Oil of mace, volatile.....	drops 4
Alcohol	f.oz. 1
Essence of jasmine, second washing, to make.....	f.oz. 16

II.

Oil of rosewood.....	m. 30
Oil of ylang ylang.....	m. 70
Oil of sandalwood.....	m. 100
Amyl acetate.....	m. 20
Apple ether.....	f.oz. 1

Essence of rose.....f.oz.	4
Essence of cassie.....f.oz.	6
Essence of jasmine.....f.oz.	20

III.

Essence of jasmine.....f.oz.	5
Essence of violet.....f.oz.	5
Essence of tuberose.....f.oz.	3
Spirit of rose.....f.oz.	1
Tincture of civet.....f.dr.	3
Tincture of musk.....m.	80
Oil of ylang ylang.....f.dr.	1
Oil of neroli.....drops	5
Alcohol	1½

The oils may be the natural or the synthetic.

Cupid's Kiss Extract.

Essence of orange flowers..f.oz.	4½
Essence of tuberose.....f.oz.	4½
Spirit of rose.....f.oz.	3½
Tincture of civet.....f.oz.	1
Tincture of musk.....f.dr.	4
Spirit of ylang ylang.....f.dr.	2
Cumarin	6
Vanillin	3
Alcohol	2

Egyptian Lotus Extract.

Essence of jasmine.....f.oz.	3¼
Essence of rose.....f.dr.	3
Tincture of vanilla.....f.oz.	2
Tincture of civet.....f.oz.	2½
Tincture of Siam benzoin..f.dr.	5
Spirit of neroli.....f.dr.	7
Spirit of clove.....f.dr.	3½
Spirit of patchouly.....f.dr.	1
Oil of rose.....drop	1
Alcohol	6½

Elder Flower Extract.

Essence of jasmine.....f.oz.	2
Essence of rose.....f.oz.	2
Essence of tuberose.....f.oz.	2
Essence of jonquille.....f.oz.	2
Essence of orange flowers..f.oz.	2
Spirit of ylang ylang.....f.oz.	5
Tincture of musk.....f.dr.	4
Tincture of ambergris.....f.dr.	2
Terpineol	60

Mix and dissolve.

Essence Bouquet Extract.

I.

Compound spirit of rose....f.oz.	8
Spirit of lemon.....f.oz.	2½
Spirit of bergamot.....f.oz.	1
Spirit of neroli.....f.oz.	1
Tincture of ambergris.....f.oz.	1
Stronger tincture of orris...f.oz.	1
Essence of cassie.....f.oz.	1
Alcohol	4

II.

Essence of rose.....f.oz.	8
Tincture of orris.....f.oz.	4
Tincture of musk.....f.oz.	1
Oil of rose.....m.	15
Oil of neroli.....m.	15
Oil of bergamot.....f.dr.	4
Oil of lemon.....f.dr.	2
Rose water.....	sufficient

As much of the latter may be added as is possible without causing precipitation.

III.

Vanillin	4
Nerolin	4
Oil of cedarwood.....m.	15
Oil of rosemary.....m.	15
Oil of clove.....m.	15
Oil of lavender flowers....m.	15
Oil of lemon.....f.dr.	2
Oil of bergamot.....f.dr.	2
Alcohol	24

Mix, allow to stand for 6 days, agitating frequently, and filter. It may be diluted with 18 fluidounces of distilled water. It is said to make a good but cheap perfume.

Esterhazy Bouquet Extract.

Essence of orange flowers..f.dr.	2½
Spirit of vetivert.....f.oz.	2
Spirit of rose.....f.dr.	1
Spirit of rose geranium....f.dr.	3
Spirit of neroli.....f.dr.	3
Spirit of sandal.....f.dr.	4
Spirit of clove.....f.dr.	2
Tincture of tonka.....f.oz.	3½
Tincture of vanilla.....f.oz.	2
Stronger tincture of orris...f.oz.	1
Tincture of ambergris.....f.dr.	2
Alcohol	5

Evening Primrose Extract.

Essence of orange flowers..f.oz.	3
Essence of rose.....f.oz.	2
Essence of jasmine.....f.oz.	2
Compound spirit of rose....f.oz.	5
Spirit of rose geranium....f.dr.	10
Spirit of ambrette.....f.dr.	4
Spirit of patchouly.....m.	80
Tincture of Siam benzoin..f.dr.	4
Tincture of musk.....f.dr.	1
Alcohol	12

Fashion Bouquet Extract.

Oil of neroli.....m.	30
Oil of rose.....m.	45
Spirit of bergamot.....f.oz.	1
Stronger tincture of orris...f.oz.	1
Tincture of musk.....f.oz.	6

Essence of jasmine.....f.oz.	8
Benzoic acid, sublimed.....gr.	30
Alcohol, to make.....f.oz.	16

Fleur de Lys Extract.

Essence of tuberose.....f.oz.	7
Essence of rose.....f.oz.	2
Essence of violet.....f.oz.	2
Essence of orange flowers..f.oz.	1
Essence of jasmine.....f.oz.	1
Tincture of vanilla.....f.oz.	2
Tincture of civet.....f.oz.	1

Floral Jewel Extract.

Spirit of rose.....f.oz.	3½
Essence of tuberose.....f.oz.	9
Essence of violet.....f.oz.	9
Tincture of musk.....f.oz.	1
Oil of bergamot.....f.dr.	4
Oil of cedrat.....f.dr.	2
Oil of neroli portugal.....f.dr.	2
Heliotropingr.	30
Alcoholf.oz.	5½

Florida Lotus Extract.

Essence of tuberose.....f.oz.	6
Essence of jasmine.....f.oz.	3
Essence of rose.....f.oz.	2
Essence of cassie.....f.oz.	2
Essence of orange flowers..f.oz.	1
Tincture of civet.....f.oz.	1
Oil of linaloe.....m.	45
Oil of ylang ylang.....m.	30
Vanillingr.	12
Heliotropingr.	5
Alcoholf.oz.	1

Flowers of Ireland Extract (Flowers of Erin).

White rose extract.....f.oz.	15
Tincture of vanilla.....f.dr.	12

Flower of Seville Extract.

Essence of jasmine.....f.oz.	3
Essence of rose.....f.oz.	3
Essence of violet.....f.oz.	3
Essence of orange flowers..f.oz.	3
Tincture of musk.....f.dr.	4
Tincture of ambergris.....f.dr.	3
Vanillingr.	10
Alcoholf.oz.	1½

Forget-Me-Not Extract.

Essence of jasmine.....f.oz.	12
Essence of rose.....f.oz.	8
Essence of violet.....f.oz.	4
Essence of cassie.....f.oz.	3
Tincture of civet.....f.oz.	2
Tincture of musk.....f.dr.	6
Oil of rose, natural or synthetic.....f.dr.	1
Oil of bergamot.....m.	30
Oil of cedarwood.....m.	30

Frangipanni Extract.**I.**

Essence of orange flowers..f.oz.	2½
Spirit of sandal.....f.oz.	4
Spirit of neroli.....f.oz.	2
Spirit of rose.....f.oz.	1
Tincture of musk.....f.dr.	3
Tincture of tonka.....f.dr.	11
Alcoholf.oz.	3½

II.

Tincture of musk.....f.oz.	5
Tincture of civet.....f.dr.	4
Stronger tincture of orris..f.oz.	3
Essence of orange flowers..f.oz.	3
Essence of tuberose.....f.oz.	3
Spirit of vetivert.....f.oz.	1
Oil of rose.....f.dr.	2
Oil of rose geranium.....f.dr.	1
Oil of sandal.....f.dr.	1
Oil of neroli.....f.dr.	1

III.

Oil of sandalwood.....m.	15
Oil of cedarwood.....m.	75
Oil of rose, synthetic.....m.	75
Oil of cassie, synthetic....f.dr.	2
Cumaringr.	20
Heliotropindr.	2½
Tincture of artificial musk..f.oz.	1½
Alcohol, to make.....f.oz.	32

V.

Vanillingr.	8
Oil of bergamot.....m.	30
Oil of rose geranium.....m.	30
Oil of rose, synthetic.....f.dr.	1
Oil of sandalwood.....f.dr.	1
Oil of neroli.....f.dr.	1
Solution of artificial musk	

1%.....f.dr.	4
Tincture of orris, stronger..f.oz.	4
Alcohol, No. 2.....f.oz.	23
Cinnamon water.....f.oz.	2
Orange flower water.....f.oz.	2

Dissolve the oils, vanillin, and solution in the alcohol, and add the waters.

Frangipanni (Roman) Extract.

Muskgr.	12
Ambergrisgr.	3
Vanilla, cut fine and triturated.....dr.	1
Tonka, bruised.....dr.	2
Essence of cassie.....f.dr.	2
Essence of rose.....f.dr.	2
Essence of orange flowers..f.dr.	2
Essence of tuberose.....f.dr.	2
Stronger tincture of orris..f.oz.	2½
Oil of rose.....drops	22
Oil of cedar, Lebanon....drops	22
Oil of rose geranium....drops	10

Oil of neroli petale.....drops 12
 Oil of orange (from bitter
 orange peel).....drops 3
 Alcoholf.oz. 14
 Mix and macerate for several months,
 agitating occasionally.

Harvest Queen Extract.

Essence of cassie.....f.oz. 2
 Essence of tuberose.....f.oz. 2
 Essence of rose.....f.oz. 2
 Essence of orange flowers.....f.oz. 2
 Essence of reseda.....f.oz. 1
 Tincture of tonka.....f.oz. 2
 Tincture of musk.....f.oz. 1
 Spirit of rose geranium.....f.oz. 1½
 Cumaringr. 30
 Alcoholf.oz. 2½

Hawthorn Blossom Extract.

Essence of violet.....f.oz. 3½
 Essence of orange flowers.....f.oz. 3½
 Essence of cassie.....f.dr. 14
 Essence of jasmine.....f.dr. 14
 Essence of rose.....f.dr. 14
 Tincture of tolu.....f.oz. 1
 Tincture of tonka.....f.dr. 7
 Tincture of vanilla.....f.dr. 7
 Tincture of musk.....f.dr. 4
 Tincture of ambergris.....f.dr. 3
 Aubepinef.dr. 2

Heliotrope Extract.

I.
 Tincture of vanilla.....f.oz. 8
 Tincture of ambergris.....f.oz. 1
 Tincture of civet.....f.oz. 1
 Compound spirit of rose.....f.oz. 3
 Oil of bitter almond.....drops 5
 Essence of rose.....f.oz. 3

II.

Spirit of bergamot.....f.oz. 6
 Tincture of Siam benzoin...m. 30
 Vanillingr. 2
 Heliotropingr. 10
 Alcoholf.oz. 9
 Mix and dissolve.

III.

Heliotropinf.dr. 5
 Cumaringr. 40
 Vanillingr. 2
 Tincture of Siam benzoin...f.oz. 1
 Tincture of civet.....f.oz. 1½
 Essence of tuberose.....f.oz. 2½
 Essence of orange flowers.....f.oz. 2½
 Essence of jasmine.....f.oz. 6
 Essence of rose.....f.oz. 6
 Alcoholf.oz. 12½

Heliotrope (White) Extract.

I.

Essence of jasmine.....f.oz. 4
 Essence of rose.....f.oz. 2
 Essence of tuberose.....f.oz. 2
 Spirit of ylang ylang.....f.dr. 6½
 Tincture of civet.....f.dr. 6
 Tincture of musk.....f.dr. 1
 Heliotropingr. 50
 Cumaringr. 20
 Alcohol, to make.....f.oz. 16
 Mix and dissolve.

II.

Heliotropinm. 75
 Oil of clove.....drop 1
 Cumaringr. 15
 Oil of jasmine.....f.dr. 2
 Alcohol, No. 2.....f.oz. 32

Hesperis Extract.

Essence of cassie.....f.oz. 3
 Essence of orange flowers.....f.oz. 3
 Tincture of musk.....f.dr. 4
 Tincture of Siam benzoin...f.oz. 2
 Tincture of tonka.....f.dr. 5½
 Oil of bergamot.....f.dr. 2
 Oil of clove.....f.dr. 1
 Spirit of lavender.....f.oz. 2½
 Spirit of rose.....f.dr. 4
 Rose waterf.dr. 4
 Alcohol, to make.....f.oz. 16

Honeymoon Extract.

Essence of jasmine.....f.oz. 3½
 Essence of rose.....f.oz. 3½
 Essence of violet.....f.oz. 3
 Spirit of ylang ylang.....f.oz. 3½
 Tincture of musk.....f.oz. 1
 Tincture of ambergris.....f.dr. 6
 Solution of ionone, 10%.....m. 15
 Alcoholf.dr. 6

Honeysuckle Extract.

I.

Essence of rose.....f.oz. 4
 Essence of violet.....f.oz. 4
 Essence of tuberose.....f.oz. 4
 Tincture of vanilla.....f.oz. 1
 Tincture of tolu.....f.oz. 1
 Tincture of musk.....f.oz. 1
 Spirit of bitter almond...f.dr. 3½
 Spirit of neroli.....f.dr. 1½
 Alcoholf.dr. 4

II.

Oil of rose.....m. 30
 Oil of bergamot.....m. 30
 Oil of angelica.....drops 3
 Oil of sandalwood.....drops 15
 Vanillingr. 6
 Solut. oil of rose.....f.oz. 8
 Solut. oil of jasmine.....f.oz. 8
 Solut. oil of violet.....f.oz. 8
 Alcohol, No. 2, to make...f.oz. 32

The three solutions mentioned are of the concrete oils in the proportion of 1 ounce to the gallon of alcohol.

Hyacinth Extract.

I.	Hyacinthin	dr.	1½
	Oil of neroli bigarade.....	drops	30
	Tincture of musk.....	f.dr.	2½
	Tincture of benzoin.....	f.dr.	5
	Essence of jasmine.....	f.oz.	3
	Alcohol	f.oz.	12
	Orange flower water, triple..	f.oz.	1½

II.

	Hyacinthin	gr.	90
	Solution of ionone, 10%.....	m.	10
	Essence of rose.....	f.oz.	4½
	Essence of orange flowers.....	f.oz.	3
	Essence of violet.....	f.oz.	3
	Essence of cassie.....	f.oz.	1½
	Tincture of vanilla.....	f.oz.	1½

Imperatrice Extract.

	Spirit of rose.....	f.dr.	10
	Spirit of rose geranium.....	f.oz.	2
	Spirit of santal.....	f.oz.	3
	Spirit of ylang ylang.....	f.oz.	1
	Essence of orange flowers.....	f.oz.	1½
	Tincture of vanilla.....	f.oz.	1½
	Tincture of musk.....	f.oz.	1½
	Cumarin	gr.	12
	Alcohol	f.oz.	4

Ixora Extract.

	Essence of cassie.....	f.oz.	5
	Essence of reseda.....	f.oz.	5
	Essence of tuberose.....	f.oz.	3½
	Spirit of orris.....	f.oz.	3½
	Tincture of Siam benzoin.....	f.dr.	3
	Tincture of musk.....	f.dr.	2½
	Oil of bergamot.....	m.	75

Jasmine Extract.

	Essence of jasmine.....	f.oz.	25
	Essence of tuberose.....	f.oz.	5
	Essence of orange flowers.....	f.oz.	2½
	Tincture of Siam benzoin.....	f.oz.	3
	Tincture of musk.....	f.dr.	4

Jockey Club Extract.

I.	Compound spirit of rose....	f.oz.	4
	Essence of rose.....	f.oz.	1
	Essence of tuberose.....	f.oz.	4
	Essence of cassie.....	f.oz.	2
	Essence of jasmine.....	f.oz.	1
	Essence of orange flowers.....	f.oz.	1
	Tincture of civet.....	f.oz.	2
	Tincture of musk.....	f.oz.	1

II.

	Essence of tuberose.....	f.oz.	5½
	Essence of cassie.....	f.oz.	2½
	Essence of jasmine.....	f.oz.	1½

	Compound of spirit of rose..	f.oz.	3½
	Spirit of ambrette.....	f.oz.	1
	Spirit of neroli.....	f.dr.	2½
	Tincture of civet.....	f.dr.	4
	Alcohol, to make.....	f.oz.	16

III.

	Oil of rose.....	f.dr.	2
	Oil of bergamot.....	f.dr.	2
	Tincture of civet.....	f.oz.	2½
	Vanillin	gr.	30
	Solut. oil of cassie.....	f.oz.	8
	Solut. oil of tuberose.....	f.oz.	8
	Solut. oil of jasmine.....	f.oz.	8
	Alcohol	f.oz.	8

The solutions mentioned are of the concrete oils in the proportion of one ounce to a gallon of alcohol.

Kew Garden Flowers Extract.

	Essence of orange flowers.....	f.oz.	5
	Essence of tuberose.....	f.oz.	2½
	Essence of cassie.....	f.oz.	2½
	Essence of jasmine.....	f.oz.	2½
	Spirit of rose geranium.....	f.oz.	2
	Tincture of musk.....	f.dr.	4
	Tincture of ambergris.....	f.dr.	3

Kiss-Me-Quick Extract.

I.

	Essence of cassie.....	f.oz.	2½
	Essence of jasmine.....	f.dr.	10
	Essence of tuberose.....	f.dr.	10
	Tincture of vanilla.....	f.dr.	3
	Tincture of Siam benzoin.....	f.dr.	2
	Stronger tincture of orris.....	f.dr.	2
	Tincture of musk.....	f.dr.	1
	Spirit of bergamot.....	f.dr.	7
	Spirit of neroli.....	f.dr.	6
	Alcohol	f.oz.	9

II.

	Essence of cassie.....	f.oz.	7
	Essence of jasmine.....	f.oz.	3½
	Essence of tuberose.....	f.oz.	3½
	Tincture of vanilla.....	f.dr.	4
	Tincture of musk.....	f.dr.	4
	Tincture of ambergris.....	f.dr.	3
	Tincture of Siam benzoin.....	m.	45
	Stronger tincture of orris.....	m.	75
	Alcohol	f.dr.	4

Lavender Extract.

	Essence of rose.....	f.oz.	2
	Spirit of lavender.....	f.oz.	10
	Alcohol	f.oz.	4

Lilac Extract (Lilac Blossom—White Lilac).

I.

	Essence of tuberose.....	f.oz.	12
	Essence of orange flowers.....	f.oz.	3
	Tincture of civet.....	f.dr.	4
	Spirit of ylang ylang.....	f.dr.	4
	Oil of bitter almond.....	drops	3

II.

Terpineol	f.dr. 10
Heliotropin	gr. 30
Oil of ylang ylang.....	m. 75
Tincture of civet.....	f.dr. 4
Essence of jasmine.....	f.oz. 12½
Essence of rose.....	f.oz. 9½
Alcohol	f.oz. 8

Lily (Gold) Extract.

Nerolin	m. 15
Linalool	m. 25
Vanillin	gr. 25
Oil of cassie, synthetic...	f.dr. 1
Tincture of artificial civet...	f.dr. 3
Essence of jasmine.....	f.oz. 2
Essence of orange flowers...	f.oz. 4
Essence of rose.....	f.oz. 7½
Essence of tuberose.....	f.oz. 15
Alcohol	f.oz. 3

Lily (White) Extract.

Essence of rose.....	f.dr. 20
Essence of orange flowers...	f.dr. 10
Essence of cassie.....	f.dr. 10
Tincture of vanilla.....	f.dr. 14
Spirit of clove.....	f.dr. 4
Alcohol	f.oz. 9

Lily-of-the-Valley Extract. (White Pond Lily Extract.)

I.

Essence of tuberose.....	f.oz. 8
Essence of jasmine.....	f.oz. 1
Essence of orange flowers...	f.oz. 1
Essence of cassie.....	f.oz. 2
Essence of rose.....	f.oz. 2
Compound spirit of rose...	f.oz. 1
Oil of bitter almond.....	drops 2
Tincture of vanilla.....	f.oz. 1

II.

Essence of rose.....	f.oz. 4
Essence of violet.....	f.oz. 2
Essence of jasmine.....	f.oz. 1
Essence of cassie.....	f.oz. 1
Spirit of linaloe.....	f.oz. 1½
Spirit of ylang ylang.....	f.dr. 6½
Compound spirit of rose...	f.dr. 4
Spirit of neroli.....	f.dr. 2½
Tincture of musk.....	f.dr. 1
Oil of mace, volatile....	drops 6
Alcohol	f.oz. 2
Essence of rose, second wash- ing, to make.....	f.oz. 16

III.

Heliotropin	drops 8
Vanillin	gr. 15
Oil of rose geranium.....	drops 3
Oil of sandalwood.....	drops 4
Oil of coriander.....	drops 10
Oil of linaloe.....	f.dr. 1
Tincture of civet.....	f.oz. 2

Solut. oil of tuberose.....	f.oz. 12
Solut. oil of jasmine.....	f.oz. 12

The solutions mentioned are of the concrete oils in the proportion of 1 ounce to the gallon of alcohol.

Liriodendron Extract.

Essence of cassie.....	f.dr. 6
Essence of tuberose.....	f.dr. 6
Essence of orange flowers...	f.dr. 6
Tincture of Siam benzoin...	f.oz. 1
Tincture of civet.....	f.oz. 4
Tincture of orris.....	f.oz. 4
Spirit of bergamot.....	f.oz. 2
Spirit of rose.....	f.dr. 5
Alcohol	f.oz. 1

Locust Blossom Extract.

I.

Essence of jasmine.....	f.oz. 3
Essence of cassie.....	f.oz. 1½
Tincture of vanilla.....	f.oz. 1½
Tincture of civet.....	f.oz. 1½
Alcohol	f.oz. 8½

II.

Essence of jasmine.....	f.oz. 8
Essence of cassie.....	f.oz. 4
Essence of tuberose.....	f.oz. 1
Tincture of vanilla.....	f.oz. 1
Tincture of civet.....	f.oz. 1
Tincture of ambergris.....	f.dr. 4
Spirit of ylang ylang.....	f.dr. 4
Heliotropin	gr. 6

Lurline Extract.

Essence of rose.....	f.oz. 4
Essence of jasmine.....	f.oz. 2½
Essence of cassie.....	f.oz. 2½
Spirit of bergamot.....	f.oz. 3
Spirit of rose.....	f.dr. 5
Spirit of santal.....	f.dr. 4
Tincture of civet.....	f.oz. 1
Tincture of ambergris.....	f.dr. 3
Oil of lavender.....	m. 70
Alcohol	f.oz. 1½

Marie Stuart Extract.

Essence of cassie.....	f.oz. 2
Essence of orange flowers...	f.oz. 2
Essence of rose.....	f.oz. 2
Compound spirit of rose...	f.oz. 4
Spirit of bergamot.....	f.dr. 12
Spirit of rose geranium...	f.dr. 10
Spirit of patchouly.....	f.dr. 2½
Tincture of musk.....	f.dr. 2
Tincture of tonka.....	f.dr. 6
Tincture of tolu.....	f.dr. 5
Tincture of Siam benzoin...	f.dr. 4
Cumarin	gr. 25
Oil of verbena.....	m. 15
Alcohol	f.oz. 1

Mix and dissolve.

May Bells Extract (Mabel Bouquet).

Essence of jasmine.....f.oz.	3¼
Ylang ylang extract No. 1..f.oz.	3½
Stronger tincture of orris..f.oz.	2¾
Fluid extract of cardamom...m.	30
Alcohol	6½

The fluid extract may be replaced by
3 drops of oil of cardamom or by 30 gr.
of freshly powdered cardamom.

May Blossom Extract.

Essence of jasmine.....f.oz.	4
Essence of rose.....f.oz.	2½
Essence of reseda.....f.oz.	2½
Essence of orange flowers..f.oz.	1½
Spirit of orris.....f.oz.	1½
Spirit of ylang ylang.....f.dr.	6
Tincture of musk.....f.dr.	2
Tincture of ambergris.....f.dr.	2
Oil of bergamot.....f.dr.	2
Heliotropin	30
Alcohol	2½

May Fern Extract.

Essence of tuberose.....f.oz.	3
Essence of jasmine.....f.oz.	3
Essence of rose.....f.oz.	3
Essence of violet.....f.oz.	1½
Essence of cassie.....f.oz.	1½
Spirit of orris.....f.oz.	1
Tincture of vanilla.....f.oz.	1
Tincture of musk.....f.dr.	4½
Tincture of civet.....f.dr.	2½
Tincture of Siam benzoin..f.dr.	2
Oil of vetivert.....m.	30
Oil of rose geranium.....m.	30
Oil of rose.....m.	30
Oil of sandal.....m.	30
Oil of bergamot.....m.	30
Oil of Canada snakeroot..drops	5

Meadow Queen Extract.

Essence of cassie.....f.oz.	4
Essence of orange flowers..f.oz.	4
Essence of jasmine.....f.oz.	4
Spirit of orris.....f.oz.	1
Tincture of tonka.....f.oz.	1
Tincture of civet.....f.dr.	4
Oil of bergamot.....f.dr.	2
Oil of bitter almond.....m.	15
Alcohol	10

Mikado Bouquet Extract.

Lily of the valley extract..f.oz.	8
Spirit of sandal.....f.oz.	1½
Spirit of rose.....f.dr.	6
Spirit of vetivert.....f.dr.	6
Spirit of cedarwood.....f.oz.	3
Tincture of civet.....f.oz.	1
Tincture of musk.....f.dr.	4
Oil of verbena.....m.	25
Oil of patchouly.....m.	15
Alcohol	4

Millefleurs Extract (Thousand Flowers).

I.	Compound spirit of rose....f.oz.	3
	Essence of rose.....f.oz.	1
	Essence of jasmine.....f.oz.	4
	Essence of orange flowers..f.oz.	2
	Essence of cassie.....f.oz.	2
	Stronger tincture of orris..f.oz.	2
	Tincture of tonka.....f.oz.	1
	Tincture of ambergris.....f.dr.	4
	Tincture of musk.....f.dr.	4
	Oil of bergamot.....f.dr.	2
	Oil of bitter almond.....drops	3
	Oil of neroli.....drops	3
	Oil of clove.....drops	3

II.	Essence of rose.....f.oz.	3½
	Essence of tuberose.....f.oz.	1¾
	Essence of jasmine.....f.oz.	1¾
	Essence of cassie.....f.oz.	1½
	Essence of violet.....f.oz.	1½
	Essence of orange flowers..f.oz.	1½
	Spirit of santal.....f.oz.	1
	Spirit of rose.....f.dr.	5
	Tincture of vanilla.....f.dr.	4
	Tincture of musk.....f.dr.	4
	Tincture of ambergris.....f.dr.	3
	Oil of bergamot.....m.	15
	Oil of bitter almond.....drops	3
	Oil of neroli.....drops	3
	Oil of clove.....drops	3

Monte Carlo Extract.

Essence of jasmine.....f.oz.	2
Essence of tuberose.....f.oz.	2
Essence of violet.....f.oz.	2
Spirit of rose.....f.oz.	2
Spirit of sandal.....f.oz.	1
Spirit of lavender.....f.oz.	1½
Tincture of musk.....f.oz.	1
Tincture of ambergris.....f.dr.	6
Tincture of vanilla.....f.dr.	7
Oil of lemon.....f.dr.	1

Mousseline Extract.

Esterhazy bouquet extract..f.oz.	5
Essence of cassie.....f.dr.	7
Essence of jasmine.....f.dr.	7
Essence of tuberose.....f.dr.	7
Spirit of sandal.....f.oz.	5
Compound spirit of rose...f.dr.	13
Spirit of rose geranium...f.dr.	3½
Alcohol	2

Musk Extract.

I.	Tincture of musk.....f.oz.	11
	Tincture of civet.....f.oz.	1
	Compound spirit of rose...f.oz.	4

This is a rather high priced article but the tincture of musk may be reduced one-half with alcohol and still yield a satisfactory product.

II.

Essence of orange flowers...	f.oz. 2
Essence of cassie.....	f.oz. 2
Spirit of rose.....	f.oz. 1
Tincture of musk.....	f.oz. 1½
Tincture of civet.....	f.oz. 1½
Tincture of vanilla.....	f.dr. 4
Tincture of tonka.....	f.dr. 6
Tincture of tolu.....	f.dr. 5
Tincture of Siam benzoin....	f.dr. 4
Alcohol	f.oz. 5

Naiad Queen Extract.

Spirit of santal.....	f.oz. 3
Spirit of vetivert.....	f.oz. 3
Spirit of rose.....	f.oz. 2
Spirit of patchouly.....	f.oz. 1½
Tincture of musk.....	f.dr. 2
Tincture of ambergris.....	f.dr. 1½
Oil of verberna.....	m. 75
Alcohol	f.oz. 6

New Mown Hay Extract.

I.

Coumarin	gr. 8
Vanillin	gr. 4
Weaker tincture of orris....	f.oz. 16

II.

Vanillin	gr. 20
Cumarin	av.oz. 1
Anisic aldehyde	m. 70
Oil of rose, freed from stearopten	m. 25
Oil of rose geranium.....	m. 90
Tincture of musk.....	f.oz. 2
Essence of orange flowers..	f.oz. 11
Essence of jasmine.....	f.oz. 12
Essence of rose.....	f.oz. 21
Night-Blooming Cereus Extract.	
Essence of jasmine.....	f.oz. 4
Tincture of tonka.....	f.oz. 4
Tincture of civet.....	f.oz. 2
Tincture of Siam benzoin....	f.oz. 4
Spirit of rose.....	f.oz. 1
Spirit of rose geranium....	f.oz. 1

Ocean Spray Extract ("Sea Breeze").

Essence of orange flowers...	f.oz. 6
Essence of jasmine.....	f.oz. 3
Compound spirit of rose....	f.oz. 5
Spirit of ambrette.....	f.dr. 4
Spirit of clove.....	f.dr. 4
Tincture of musk.....	f.dr. 2
Tincture of vanilla.....	f.dr. 6

Orange Blossom or Flower Extract.

I.

Essence of orange flowers..	f.oz. 12
Essence of cassie.....	f.oz. 2
Tincture of musk.....	f.oz. 2

II.

Oil of neroli, synthetic.....	m. 160
Tincture of tolu.....	f.dr. 4

Tincture of musk.....	f.dr. 2
Spirit of rose.....	f.oz. 2½
Essence of orange flowers..	f.oz. 30

Patchouly Extract.

I.

Spirit of patchouly.....	f.oz. 5
Spirit of rose.....	f.dr. 4
Alcohol	f.oz. 10½

II.

Spirit of patchouly.....	f.dr. 8½
Spirit of bergamot.....	f.oz. 2
Essence of jasmine.....	f.oz. 4
Essence of rose.....	f.oz. 2
Tincture of Siam benzoin....	f.dr. 2
Alcohol, to make.....	f.oz. 16

Peach Blossom Extract.

I.

Essence of orange flowers..	f.oz. 3½
Essence of tuberose.....	f.dr. 7
Spirit of lemon.....	f.dr. 13
Spirit of almond.....	f.oz. 2½
Peru balsam.....	gr. 24
Alcohol	f.oz. 12

II.

Essence of cassie.....	f.oz. 4½
Essence of orange flowers..	f.oz. 4½
Essence of rose.....	f.oz. 3
Solution of ionone, 10%....	f.dr. 3
Tincture of musk.....	f.dr. 4
Tincture of civet.....	f.dr. 6
Oil of ylang ylang, natural or synthetic.....	f.dr. 1
Heliotropin, crystal.....	gr. 30
Alcohol	f.oz. 2

Peau d'Espagne Extract.

Tincture of vanilla.....	f.oz. 1
Tincture of tonka.....	f.oz. 1
Tincture of storax.....	f.oz. 1
Tincture of benzoin.....	f.dr. 4
Tincture of civet.....	f.dr. 3
Tincture of musk.....	f.dr. 3
Oil of neroli petate.....	m. 40
Oil of bergamot.....	m. 40
Oil of santal.....	m. 40
Oil of rose geranium.....	m. 40
Oil of rose.....	m. 20
Oil of verberna.....	m. 20
Oil of cedarwood.....	m. 20
Oil of lavender, Mitcham...	m. 20
Oil of clove.....	m. 20
Alcohol	f.oz. 11

Pearl d'Orient Extract.

Essence of cassie.....	f.oz. 8
Essence of orange flowers..	f.oz. 8
Spirit of rose.....	f.oz. 3
Spirit of ylang ylang.....	f.oz. 1½
Tincture of Siam benzoin....	f.dr. 6
Tincture of musk.....	f.oz. 1½
Alcohol	f.oz. 5

Primrose Extract.

Essence of rose.....	f.oz.	2½
Essence of cassie.....	f.oz.	2½
Essence of tuberose.....	f.oz.	2½
Essence of violet.....	f.oz.	1½
Spirit of rose.....	f.oz.	1
Tincture of ambergris.....	f.oz.	1
Tincture of civet.....	f.oz.	1¾
Solution of ionone, 10%.....	m.	25
Oil of bergamot.....	m.	30
Heliotropin	gr.	30
Cumarin	gr.	10

Rondeletia Extract.

I.

Tincture of musk.....	f.dr.	4
Tincture of ambergris.....	f.dr.	4
Tincture of vanilla.....	f.dr.	4
Spirit of lavender.....	f.oz.	5
Spirit of clove.....	f.oz.	4
Spirit of bergamot.....	f.oz.	2
Spirit of rose.....	f.oz.	1
Alcohol	f.oz.	2

II.

Spirit of clove.....	f.oz.	4
Spirit of lemon.....	f.oz.	2½
Spirit of lavender.....	f.oz.	2½
Spirit of bergamot.....	f.oz.	2
Spirit of neroli.....	f.oz.	1
Spirit of rose.....	f.dr.	2½
Alcohol	f.oz.	4

Rose d'Amour Extract.

Essence of rose.....	f.oz.	7½
Spirit of rose.....	f.oz.	3
Tincture of musk.....	f.dr.	3
Oil of rose geranium.....	f.dr.	1
Oil of santal.....	drops	2
Alcohol	f.oz.	5

Rose (Moss) Extract.

Compound spirit of rose.....	f.oz.	9
Essence of orange flowers.....	f.oz.	3
Essence of rose.....	f.oz.	2
Tincture of civet.....	f.oz.	1
Tincture of musk.....	f.oz.	1

(Rose (Musk) Extract.

Essence of rose.....	f.dr.	10
Essence of tuberose.....	f.dr.	5
Essence of jasmine.....	f.dr.	5
Stronger tincture of orris.....	f.dr.	14
Tincture of musk.....	f.dr.	7
Spirit of orange.....	f.dr.	2
Spirit of rose.....	f.dr.	2
Alcohol	f.oz.	10½

Rose (Tea) Extract.

I.

Essence of rose.....	f.oz.	4
Essence of orange flowers.....	f.oz.	1
Compound spirit of rose.....	f.oz.	8
Spirit of sandal.....	f.oz.	2
Stronger tincture of orris.....	f.oz.	1
Oil of rose geranium.....	drops	20

II.

Essence of rose.....	f.dr.	12
Compound spirit of rose.....	f.dr.	22
Spirit of rose geranium.....	f.dr.	22
Spirit of sandal.....	f.dr.	10
Spirit of neroli.....	f.dr.	3
Stronger tincture of orris.....	f.oz.	1
Alcohol, to make.....	f.oz.	16

Rose (Turkish) Extract.

Essence of rose.....	f.oz.	6
Spirit of rose.....	f.oz.	1½
Spirit of rose geranium.....	f.oz.	3½
Tincture of ambergris.....	f.dr.	6
Tincture of musk.....	f.dr.	4
Alcohol	f.oz.	4

Rose (White) Extract.

I.

Compound spirit of rose.....	f.oz.	8
Essence of rose.....	f.oz.	3
Essence of jasmine.....	f.oz.	4
Patchouly extract, No. 1.....	f.oz.	1

II.

Oil of rose.....	f.dr.	2
Spirit of rose geranium.....	f.oz.	1½
Essence of rose.....	f.oz.	3
Essence of jasmine.....	f.oz.	1½
Tincture of musk.....	f.dr.	6
Tincture of ambergris.....	f.dr.	6
Alcohol	f.oz.	½

Rose (Yellow) Extract.

Essence of rose.....	f.oz.	2
Essence of tuberose.....	f.oz.	2
Tincture of tonka.....	f.dr.	10
Verbena extract, No. IV.....	f.dr.	2½
Alcohol	f.oz.	10½

Rose Geranium Extract.

Oil of rose geranium.....	f.oz.	1
Alcohol	f.oz.	15

Shazada Extract.

Essence of rose.....	f.oz.	13
Spirit of rose.....	f.oz.	4½
Spirit of clove.....	f.oz.	2
Tincture of civet.....	f.oz.	4
Tincture of musk.....	f.oz.	2
Oil of bergamot.....	f.dr.	6
Oil of lemon.....	f.dr.	5
Oil of lavender, Mitcham.....	f.dr.	3
Oil of nutmeg.....	f.dr.	2
Alcohol	f.oz.	4½

Snow Fairy Extract.

Essence of jasmine.....	f.oz.	14½
Muguet	dr.	3
Tincture of musk.....	f.dr.	5
Tincture of cardamon.....	f.dr.	2
Tincture of Siam benzoin.....	m.	30
Oil of linaloe.....	m.	90
Oil of cananga.....	m.	90

Spring Flowers Extract.

Essence of rose.....	f.oz. 7
Essence of violet.....	f.oz. 6
Essence of cassie.....	f.oz. 1
Compound spirit of rose.....	f.oz. 1
Tincture of ambergris.....	f.oz. 1
Oil of bergamot.....	f.dr. 1

Stephanotis Extract.

I.

Essence of cassie.....	f.dr. 5
Essence of tuberose.....	f.dr. 5
Essence of jasmine.....	f.dr. 3
Stronger tincture of orris.....	f.oz. 4
Tincture of tonka.....	f.oz. 1
Tincture of musk.....	f.oz. 1
Spirit of rose.....	f.dr. 4
Spirit of neroli.....	f.dr. 4
Benzoic acid, from benzoin.....	gr. 30
Alcohol, to make.....	f.oz. 16

II.

Oil of ylang ylang, synthetic.....	m. 15
Oil of rosewood.....	m. 25
Oil of rose.....	m. 30
Oil of bergamot.....	m. 35
Tincture of artificial musk.....	f.oz. 1 $\frac{1}{4}$
Tincture of musk seed.....	f.oz. 2 $\frac{1}{2}$
Tincture of orris, stronger.....	f.oz. 5 $\frac{1}{2}$
Essence of tuberose.....	f.oz. 2 $\frac{1}{2}$
Essence of rose.....	f.oz. 5
Essence of jasmine.....	f.oz. 5
Alcohol	f.oz. 6

Stolen Kisses Extract.

Essence of jonquille.....	f.oz. 4
Essence of cassie.....	f.oz. 2
Stronger tincture of orris.....	f.oz. 3
Tincture of tonka.....	f.oz. 2
Tincture of civet.....	f.oz. 1
Tincture of ambergris.....	f.dr. 3
Spirit of rose.....	f.dr. 6
Oil of citronella (best).....	drops 8
Oil of verbena.....	drops 4
Alcohol	f.oz. 2 $\frac{1}{2}$

Sweet Brier Extract.

Oil of bergamot.....	f.dr. 6
Oil of lemon.....	f.dr. 6
Oil of lavender.....	f.dr. 4
Oil of verbena.....	drops 8
Spirit of rose.....	f.oz. 2
Spirit of almond.....	f.dr. 12 $\frac{1}{2}$
Tincture of musk.....	f.oz. 2
Alcohol	f.oz. 8 $\frac{1}{2}$

Sweet Hawthorn Extract.

Anisic aldehyde.....	m. 15
Oil of jasmine, synthetic.....	m. 15
Oil of neroli.....	m. 15
Oil of linaloe, synthetic.....	m. 45
Solution of artificial musk (1% in 60% alcohol).....	f.oz. 5
Alcohol	f.oz. 24
Distilled water.....	f.oz. 11

Sweet Pea Extract.

I.

Essence of tuberose.....	f.oz. 5
Essence of orange flowers.....	f.oz. 5
Essence of rose.....	f.oz. 5
Tincture of tonka.....	f.oz. 2

II.

Essence of tuberose.....	f.oz. 7 $\frac{1}{2}$
Essence of orange flowers.....	f.oz. 3 $\frac{3}{4}$
Essence of rose.....	f.oz. 3 $\frac{3}{4}$
Tincture of vanilla.....	f.dr. 4
Tincture of musk.....	f.dr. 2
Tincture of ambergris.....	f.dr. 1 $\frac{1}{2}$

Sweet Vernalia Extract.

Essence of cassie.....	f.oz. 6
Stronger tincture of orris.....	f.oz. 5
Tincture of Siam benzoin.....	f.dr. 6
Tincture of ambergris.....	f.dr. 5
Oil of rose geranium.....	m. 80
Cumarin	gr. 40
Alcohol	f.oz. 3 $\frac{1}{2}$

Trailing Arbutus Extract.

Essence of tuberose.....	f.oz. 2 $\frac{1}{2}$
Essence of orange flowers.....	f.oz. 2 $\frac{1}{2}$
Essence of cassie.....	f.oz. 1 $\frac{1}{2}$
Spirit of rose.....	f.oz. 2
Spirit of ylang ylang.....	f.oz. 1
Spirit of almond.....	f.dr. 1 $\frac{1}{2}$
Tincture of vanilla.....	f.oz. 2 $\frac{1}{2}$
Tincture of musk.....	f.dr. 4
Tincture of Siam benzoin.....	f.dr. 2
Solution of ionone, 10%.....	m. 30
Heliotropin	gr. 10
Vanillin	gr. 6
Alcohol	f.oz. 3

Trefle Extract.

I.

Amyl salicylate.....	f.dr. 2
Oil of lavender, Mitcham.....	m. 25
Oil of clove.....	m. 40
Oil of ylang ylang.....	f.dr. 2
Cumarin	gr. 12
Vanillin	gr. 12
Tincture of musk.....	f.dr. 6
Tincture of Siam benzoin.....	f.oz. 2
Essence of orange flowers.....	f.oz. 5
Essence of jasmine.....	f.oz. 12 $\frac{1}{2}$
Essence of tuberose.....	f.oz. 12 $\frac{1}{2}$

II.

Vanillin	gr. 45
Oil of ylang ylang.....	m. 10
Oil of rose.....	m. 35
Oil of bergamot.....	f.dr. 5 $\frac{1}{2}$
Amyl salicylate	f.dr. 4
Spirit of hyacinth.....	f.oz. 2
Tincture of artificial civet.....	f.dr. 2 $\frac{1}{2}$
Tincture of artificial musk.....	f.dr. 3 $\frac{1}{2}$
Alcohol	f.oz. 28

Tuberose Extract.

Essence of tuberose.....	f.oz. 15
Tincture of ambergris.....	f.oz. 1

Upper Ten Extract.

Tincture of vanilla.....	f.oz. 4
Tincture of ambergris.....	f.oz. 3
Stronger tincture of orris.....	f.oz. 3
Compound spirit of rose.....	f.oz. 3
Essence of orange flowers.....	f.oz. 3
Oil of bergamot.....	f.dr. 1½
Oil of lemon.....	drops 15

Verbena Extract.

I.

Essence of orange flowers.....	f.oz. 3
Essence of tuberose.....	f.oz. 3
Compound spirit of rose.....	f.oz. 3
Spirit of lemon grass.....	f.dr. 14
Spirit of neroli.....	f.dr. 10
Oil of lemon.....	f.dr. 6
Oil of orange.....	f.dr. 2½
Alcohol	f.oz. 3

II.

Oil of orange.....	drops 30
Spirit of lemon.....	f.oz. 10
Spirit of lemon grass.....	f.oz. 6

Veronica Extract.

Essence bouquet.....	f.oz. 9
Essence of rose.....	f.oz. 3
Essence of jasmine.....	f.oz. 1½
Essence of tuberose.....	f.oz. 1½
Tincture of musk.....	f.dr. 4
Tincture of ambergris.....	f.dr. 3

Violet Extract.

I.

Essence of violet.....	f.oz. 11
Essence of cassie.....	f.oz. 2
Tincture of musk.....	f.oz. 1
Stronger tincture of orris.....	f.oz. 2

II.

Ionone, 10% solution.....	f.dr. 5
Heliotropin	m. 30
Oil of orris, concrete.....	dr. 1
Oil of violet, concrete.....	dr. 1
Solution of artificial musk 1%	f.dr. 2
Tincture of civet.....	f.dr. 4
Solut. oil of jasmine.....	f.oz. 4
Solut. oil of rose.....	f.oz. 8
Solut. oil of cassie.....	f.oz. 16
Alcohol, No. 2, to make.....	f.oz. 32

The oil solutions referred to here are solutions of 1 ounce of concrete oil to 1 gallon of alcohol.

III.

Oil of ylang ylang, artificial.....	m. 15
Spirit of rose (from artificial oil).....	f.oz. 1

Spirit of neroli (from artificial oil).....	f.dr. 4
Solution of artificial musk, 1%	m. 100
Solution of oil of orris, concrete, 1%.....	f.oz. 1
Solution of ionone, 1%.....	f.oz. 15
Tincture of benzoin.....	f.oz. 2
Alcohol	f.oz. 10

Violet (Forest) Extract.

Spirit of almond.....	f.dr. 1
Essence of rose.....	f.oz. 5
Essence of tuberose.....	f.oz. 6½
Essence of cassie.....	f.oz. 12
Tincture of orris, stronger.....	3½
Alcohol	f.oz. 3

This formula is noteworthy because it does not contain violet in any form.

Violet (Imperial) Extract.

Ionarol	dr. 4
Vanillin	gr. 10
Oil of orris, concrete.....	dr. 1
Tincture of musk.....	f.oz. 6
Essence of rose.....	f.oz. 4
Essence of jasmine.....	f.oz. 6
Essence of cassie.....	f.oz. 8
Essence of violet.....	f.oz. 12

Violet (Mountain) Extract.

Ionarol	gr. 50
Oil of ylang ylang.....	m. 35
Tincture of musk.....	f.dr. 3
Essence of violet.....	f.oz. 18
Essence of violet (2nd washing)	f.oz. 7
Essence of cassie (2nd washing)	f.oz. 2
Essence of jasmine (2nd washing)	f.oz. 4

Violet de Parme Extract (Parmese Violet).

Essence of violet.....	f.oz. 7
Essence of cassie.....	f.oz. 4
Spirit of orris.....	f.oz. 2
Compound spirit of rose.....	f.oz. 1
Spirit of almond.....	f.dr. 1
Tincture of civet.....	f.dr. 4
Tincture of ambergris.....	f.dr. 4
Alcohol	f.oz. 1

Violet (Riviera) Extract.

Essence of violet.....	f.oz. 24
Essence of jasmine.....	f.oz. 4
Tincture of ambergris.....	f.dr. 6
Tincture of civet.....	f.dr. 4
Spirit of bergamot.....	f.oz. 1
Solution of ionone, 10%.....	f.dr. 2
Heliotropin	gr. 2

Violet (Russian) Extract.

Ionone, 10% solution.....	f.oz. 1
Oil of orris, concrete.....	m. 10

Oil of ylang ylang.....m.	15
Essence of violet.....fl.oz.	15
Essence of violet (3rd washing).....fl.oz.	6
Essence of rose (2nd washing).....fl.oz.	3
Essence of orange flower (3rd washing).....fl.oz.	4½
Essence of jasmine (2nd washing).....fl.oz.	6

Violet (Spring) Extract.

Ionone.....dr.	2
Vanillin.....gr.	5
Oil of orris.....m.	15
Oil of rose geranium.....m.	15
Tincture of musk.....fl.oz.	1
Essence of cassie.....fl.oz.	1½
Essence of rose.....fl.oz.	1½
Essence of jasmine.....fl.oz.	3
Essence of violet.....fl.oz.	4
Alcohol.....fl.oz.	20

Violet (Swiss Alpine) Extract.

Essence of violet.....fl.oz.	20
Essence of cassie.....fl.oz.	5
Essence of rose.....fl.oz.	1
Spirit of orris.....fl.oz.	4
Solution of ionone, 10%.....fl.dr.	1
Spirit of almond.....m.	50
Tincture of ambergris.....fl.dr.	6

Add chlorophyll if desired.

Violet (Tampa) Extract.

Essence of violet.....fl.oz.	24
Essence of cassie.....fl.oz.	2
Spirit of orris.....fl.oz.	2
Solution of ionone, 10%.....fl.dr.	2
Tincture of musk.....fl.oz.	1
Vanillin.....gr.	6
Alcohol.....fl.oz.	1

Violet (Wood) Extract.

I. Violet extract, No. II.....fl.oz.	16
Oil of bitter almond.....drops	15

II. Essence of violet.....fl.dr.	13
Essence of cassie.....fl.dr.	10
Essence of rose.....fl.dr.	6½
Essence of tuberose.....fl.dr.	6½
Stronger tincture of orris.....fl.dr.	10
Spirit of almond.....fl.dr.	1½
Alcohol.....fl.oz.	9

III. Oil of bergamot.....m.	30
Solution of artificial musk (1% in 60% alcohol).....fl.oz.	1
Solution of ionone (1 in 30 in 60% alcohol).....fl.oz.	20
Solution of oil of orris, concrete (1 in 60 in 60% alcohol).....fl.oz.	20

West End Extract.

Essence of jasmine.....fl.oz.	1
Essence of cassie.....fl.oz.	1
Stronger tincture of orris.....fl.oz.	3
Tincture of musk.....fl.oz.	2
Tincture of storax.....fl.dr.	2
Spirit of rose.....fl.dr.	4
Spirit of cedarwood.....fl.dr.	5
Spirit of neroli.....fl.dr.	4
Oil of verbenia.....drops	4
Benzoic acid, from bezoin...gr.	15
Alcohol, to make.....fl.oz.	16

Widow McPhelan Extract.

Essence of cassie.....fl.oz.	2
Essence of violet.....fl.oz.	1
Stronger tincture of orris.....fl.oz.	3
Spirit of nutmeg.....fl.dr.	5
Spirit of pimento.....fl.dr.	5
Spirit of rose.....fl.dr.	2
Spirit of cinnamon.....m.	30
Ylang ylang extract No. II.....fl.oz.	3
Alcohol.....fl.oz.	6

Wild Olive Extract.

I. Essence of rose.....fl.oz.	4
Essence of violet.....fl.oz.	2
Essence of jasmine.....fl.oz.	2
Essence of cassie.....fl.oz.	1
Spirit of bergamot.....fl.oz.	1
Spirit of rose.....fl.dr.	2
Spirit of lavender.....fl.dr.	3
Alcohol, to make.....fl.oz.	16

II. Essence of rose.....fl.oz.	5
Essence of jasmine.....fl.oz.	2½
Essence of cassie.....fl.oz.	1
Spirit of rose.....fl.oz.	1
Tincture of orris, stronger.....fl.oz.	1½
Tincture of musk.....fl.dr.	2
Tincture of ambergris.....fl.dr.	1½
Spirit of ylang ylang.....fl.dr.	1
Alcohol.....fl.oz.	4½

Woodbine Extract.

See Honeysuckle Extract.

Ylang Ylang Extract.

I. Spirit of ylang ylang.....fl.oz.	8
Compound spirit of rose...fl.oz.	4
Essence of jasmine.....fl.oz.	2
Tincture of civet.....fl.oz.	2

II. Essence of jasmine.....fl.dr.	21
Essence of tuberose.....fl.dr.	14
Essence of orange flowers.....fl.dr.	7
Spirit of ylang ylang.....fl.dr.	11
Alcohol.....fl.oz.	9½

TOILET WATERS (Perfumed Waters).

Toilet waters differ from handkerchief extracts in being much weaker; frequently they also contain water (in small proportion) which it is usually impossible to add to handkerchief extracts without precipitating some of the constituents. These waters are also cheaper than the "extracts" and are intended to be used freely, as in the bath, for spraying or sprinkling about in a room, for barber's use, etc. They are usually named after the predominating ingredient, viz., lavender water, violet water, etc.

The most popular of the toilet waters are Cologne Water, Florida Water, Violet Water, and Bay Rum.

The essences, spirits and tinctures used for these preparations are the same as those used for making handkerchief extracts. After making these preparations, they should be put away for several weeks to allow "ripening" or blending of odors, after which they may be filtered.

Besides the waters mentioned herein and for which formulas are given, other waters may be made by suitably diluting the corresponding extract with alcohol, then adding water until the mixture becomes milky, and filtering clear through talcum or calcium phosphate. For example, heliotrope or frangipanni water may be made by diluting heliotrope or frangipanni extract as described. These waters are frequently but improperly called colognes (heliotrope cologne, lilac cologne, violet cologne, etc.).

It is customary to "finish off" bottles of toilet water by capping the stoppers. This is done with either split skin or gold-beater's skin, as they are termed. These should be cut into strips slightly wider than the distance from one side of the neck of the bottle to the other side, measuring over the top of the stopper. Just before using moisten the skin to make it pliable and more readily

adapt itself to the contour of the neck and stopper. The split skin should be merely moistened, not soaked, as soaking makes it lose its nice appearance. Gold-beater's skin may, however, be wetted quite thoroughly. Then draw the skin taut and very smooth over the stopper and over the mouth of the bottle and tie it snugly just below the lips with a piece of fine, strong cord. The excess of skin is then to be cut off close with a sharp knife. Some prefer to cut the skin off with scissors, leaving a slight excess beyond the cord of $1/8$ to $1/16$ inch. Then loop a narrow ribbon of nice color first around the base of the stopper and then around the neck of the bottle and tie the ends in a nice bow. Instead of ribbon, fancy silk cord may be used, this to be tied in a knot, allowing the ends to project a quarter inch or so. These ends should be combed out tassel-like. Very frequently, especially if the stopper is of a fancy design, a piece of narrow split skin is wound once around the base of the stopper and the lips of the bottle, cutting off the excess as before. Then finish with a piece of ribbon or silk cord.

Cologne Water (Eau de Cologne).

Cologne water, or "cologne" as it is so frequently denominated, is really a toilet water but the public frequently make it serve as an "extract." Cologne water was first introduced to public notice in the 18th century by Johan Maria Farina of the city of Cologne, Germany, whence its name, "Farina" cologne water in sealed bottles is still an article of commerce. The original has been imitated by almost every professional and amateur perfumer but seemingly without success.

The primary or essential constituent of cologne water is oil of orange flowers to which are added other citrine oils (orange, lemon, bergamot, cedrat). Some of the imitations are made without oil of neroli and may have a variety of other ingredients such as musk

and clove. The original cologne water is made by distillation.

As in the case of other perfumes, superior ingredients will make a first-class product, inferior ingredients a poor product.

Cologne water should not be used when freshly made, but should be aged by storing it away in sealed vessels in a dark place for several months, or a year if possible. After being completed it should be preserved in well stoppered bottles, away from strong light and heat.

The essences, spirits, and tinctures used in the formulas below are the same as those employed in making handkerchief extracts, which see.

Cologne waters are known by various fanciful appellations such as Newport Cologne, Opera Cologne, German Cologne, Lafayette Cologne, Farina Cologne, Victoria Cologne, Superior Cologne, Imperial Cologne, Oriental Cologne, Royal Cologne, etc.

I.

Oil of bergamot.....f.dr.	4
Oil of lemon.....f.dr.	2
Oil of lavender flowers...f.dr.	1
Oil of neroli.....f.dr.	1
Oil of rosemary.....m.	105
Acetic ether.....m.	30
Water.....f.oz.	4
Alcohol.....f.oz.	28

Dissolve the oils and ether in the alcohol, add the water, set the mixture aside, in a well-closed vessel for 8 days, then filter in a well-covered funnel.

This formula is inserted not because it is especially good but because it was recognized in the U. S. P. 1880 under the names Spiritus Odoratus, Perfumed Spirit, and Cologne Water. It is now mentioned in the N. F. Appendix.

II. This is Scoville's formula which was presented at a meeting of the A. Ph. A.:

Oil of bergamot.....f.dr.	3
Oil of lemon.....f.dr.	1½
Oil of neroli.....f.dr.	1
Oil of orange.....m.	30
Oil of rosemary.....m.	30

Tincture of Siam benzoin...f.dr.	2
Alcohol.....f.oz.	28
Orange flower water.....f.oz.	3

Dissolve the oils in the alcohol, add the tincture, shake well, and add the water.

III. The following formula was awarded a prize about 20 years ago in London as furnishing the best cologne water among 219 samples submitted:

Oil of bergamot.....f.dr.	2
Oil of lemon.....f.dr.	1
Oil of neroli.....drops	20
Oil of rosemary.....drops	20
Oil of origanum, true....drops	6
Alcohol.....f.oz.	19
Orange flower water.....f.oz.	1

Dissolve the oils in the alcohol and add the water.

IV. This formula won a medal about 20 years ago at a Sydney Exhibition:

Oil of cedrat.....m.	100
Oil of neroli petale.....m.	60
Oil of neroli bigarade.....m.	20
Oil of bergamot.....m.	40
Oil of rosemary.....m.	40
Alcohol.....f.oz.	32

This seems to be very weak in oils but the author claims that other colognes contain too great a proportion of oils.

Cologne Water With Musk.

A toilet water with musk is not a true cologne water because the original does not contain this ingredient. However so many formulas do contain musk that the best ones have been selected and are given here:

V.

Oil of neroli petale.....f.dr.	1
Oil of rose geranium.....m.	30
Stronger tincture of orris...f.oz.	2
Tincture of musk.....f.oz.	1
Tincture of civet.....f.dr.	1
Alcohol.....f.oz.	28

Mix and filter.

VI.

Oil of bergamot.....f.dr.	3
Oil of lemon.....f.dr.	1½
Oil of lavender flowers....m.	30
Oil of orange.....m.	30
Oil of rose.....m.	30
Grain musk.....gr.	1
Alcohol.....f.oz.	30
Water, to make.....f.oz.	32

Mix the oils and musk with the alcohol, add the water, macerate for 5 days, agitating frequently, and filter.

Lafayette Cologne.

VII.

Oil of bergamot.....	fl.dr.	3
Oil of lemon.....	fl.dr.	1½
Oil of lavender flowers.....	m.	40
Oil of rose.....	m.	30
Oil of neroli.....	m.	20
Musk extract.....	fl.dr.	2
Alcohol	fl.oz.	32
Orange flower water.....	fl.oz.	3½

Oriental Cologne.

VIII.

Musk	gr.	4
Vanilla, the meat or interior.....	gr.	10
Asafetida, powder.....	gr.	1
Oil of rose.....	m.	30
Oil of bergamot.....	fl.dr.	6
Essence of jasmine.....	fl.dr.	5
Essence of violet.....	fl.dr.	5
Oil of neroli.....	m.	40
Alcohol	fl.oz.	59
Water	fl.oz.	5

Mix the musk, vanilla, water and 11 fluidounces of alcohol, macerate for 30 days, add the remaining ingredients, macerate another 30 days, agitating frequently, and filter.

IX.

Oil of bergamot.....	fl.dr.	2
Oil of rose geranium.....	m.	30
Tincture of musk.....	fl.dr.	2
Tincture of vanilla.....	fl.dr.	1
Essence of violet.....	fl.dr.	2
Jockey club extract.....	fl.dr.	2
Alcohol	fl.oz.	21
Water	fl.oz.	3

Mix all but the water, add the latter gradually with agitation, set aside for some time, and then filter.

White Rose Cologne.

The following has been known by this name:

X.

Oil of rose.....	m.	15
Oil of bergamot.....	m.	20
Oil of sweet orange.....	m.	15
Oil of patchouli.....	drops	3
Tincture of musk.....	m.	30
Tincture of civet.....	m.	30
Tincture of orris, stronger.....	fl.dr.	2
Essence of jasmine.....	fl.oz.	1
Alcohol	fl.oz.	22
Rose water.....	fl.oz.	2

Dissolve the oils in the alcohol, add the tinctures, and then the rose water. Let stand a few weeks, color pale green with chlorophyll, and filter.

Bath Cologne.

Cheaper kinds of cologne water are offered under this name. They must also contain none of the animal perfumes. The following formulas are recommended:

XI.

Oil of bergamot.....	fl.dr.	1
Oil of rosemary.....	fl.dr.	1
Oil of citronella.....	m.	25
Oil of lemon.....	m.	25
Oil of sassafras.....	m.	25
Oil of clove.....	m.	15
Oil of wintergreen.....	m.	15
Acetic ether.....	fl.dr.	1
Alcohol	fl.oz.	24
Water	fl.oz.	5

Mix, let stand a week or more, and filter.

XII.

Oil of lavender flowers.....	fl.dr.	1
Oil of bergamot.....	m.	30
Oil of orange.....	m.	30
Oil of rosemary.....	m.	30
Oil of cinnamon.....	drops	5
Alcohol	fl.oz.	32

Headache Cologne.

By headache cologne is meant a fairly weak cologne water to which menthol has been added in the proportion of 20 to 30 grains to the pint. Or use 30 grains of menthol and 8 grains of camphor to the pint.

Antiseptic Cologne.

Among the various formulas offered under this name the following is the best one:

XIII.

Oil of bergamot.....	fl.dr.	1½
Oil of orange.....	m.	15
Oil of rosemary.....	m.	15
Eucalyptol	m.	30
Bornyl acetate.....	gr.	10
Tincture of Siam benzoin.....	fl.dr.	2
Alcohol	fl.oz.	22
Water	fl.oz.	10

Dissolve the oils, eucalyptol, and bornyl acetate in the alcohol, add the tincture, then the water gradually with agitation, set aside for a few days, or weeks if possible, and filter.

Bornyl acetate is the odorous principles of oil of pine but is now made synthetically from borneol. It is about 20 times as strong as oil of pine.

Eau de Bretfeld.

XIV.

Oil of bergamot.....	f.oz. 1
Oil of lemon.....	f.dr. 2
Oil of clove.....	m. 50
Oil of lavender.....	m. 50
Oil of neroli.....	m. 40
Oil of rose.....	drops 15
Vanillin	gr. 1
Tincture of musk.....	m. 30
Alcohol	f.oz. 54
Water	f.oz. 2

Mix all ingredients except the water, agitate well, add the water, shake again, set aside for 8 days, and filter.

Florida Water.

This is a toilet water of American origin, but it is now made and used in England, Germany, Japan, and other parts of the world. It is essentially a mixture of citrine oils with lavender to which are added spice oils such as clove, cinnamon, mace and spearmint. Benzoin is the preferred fixative. This is sometimes replaced by Peru balsam or storax. Musk and similar substances do not belong in this perfume but some formulas do contain it.

Any of the following preparations may be cheapened by adding water till the mixture becomes slightly but permanently turbid, then filtering through calcium phosphate or talcum until clear.

As in the case of cologne water, Florida water improves with age. It should be allowed to stand for several months or even a year before it is used.

XV.

Oil of lavender flowers....	f.oz. 1
Oil of bergamot.....	f.dr. 4
Oil of clove.....	f.dr. 2
Oil of rose geranium.....	m. 30
Oil of cinnamon.....	drops 15
Oil of spearmint.....	drops 4
Benzoic acid, from benzoin...	gr. 20
Water	f.oz. 4
Alcohol	f.oz. 60

Mix the oils and acid with the alcohol, dissolve by agitation, add the water, agitate again, and filter clear.

XVI.

Oil of lavender flowers....	f.oz. 1
Oil of bergamot.....	f.dr. 4
Oil of orange.....	f.dr. 2
Oil of cinnamon.....	f.dr. 2
Oil of neroli.....	m. 15
Oil of caraway.....	drops 10
Oil of spearmint.....	drops 10
Tincture of Siam benzoin...	f.dr. 4
Water	f.oz. 8
Alcohol.....	f.oz. 54

Prepare like No. XV.

Honey Water.

This is an old-time English toilet water. The British Pharmaceutical Codex gives this formula:

XVII.

Oil of bergamot.....	f.dr. 1
Oil of lavender flowers.....	m. 20
Oil of clove.....	m. 20
Oil of sandalwood.....	drops 5
Tincture of musk.....	f.dr. 6
Tincture of saffron.....	f.dr. 1
Honey	gr. 40
Orange flower water.....	f.oz. 2½
Rose water.....	f.oz. 2½
Alcohol, to make.....	f.oz. 16

Hungary Water.

This is a toilet water of older origin than cologne water and is so called because it was a favorite of a former queen of Hungary. The original article was made by distillation but present-day imitations are made from volatile oils. The main constituent is rosemary.

XVIII.

Oil of rosemary.....	f.dr. 3
Oil of melissa.....	f.dr. 1½
Oil of lemon.....	f.dr. 1½
Oil of peppermint.....	drops 8
Essence of rose.....	f.oz. 3
Essence of orange flower..	f.oz. 3
Alcohol	f.oz. 26

Geranium Water.

XIX.

Oil of rose geranium.....	f.oz. 1½
Stronger tincture of orris...	f.oz. 1½
Tincture of musk.....	f.dr. 1½
Alcohol	f.oz. 48
Rose water.....	f.oz. 6

Mix the oils and tinctures with the alcohol, add the water, and filter.

Lavender Water.

The basis of lavender water is, of course, oil of lavender flowers of which there are two principal kinds of good

quality. The French oil is excellent but the English oil is most esteemed and much higher priced.

XX.

Oil of lavender, best.....	f.dr.	6
Alcohol	f.oz.	48
Rose water.....	f.oz.	16
Magnesium carbonate.....	av.oz.	1

Triturate the oil with the magnesium carbonate, add the alcohol, and then the water, and filter. It may be colored a light brown tint with caramel if desired.

Lilac Water.

XXI.

Terpineol	f.oz.	1½
Essence of rose.....	f.dr.	6
Essence of orange flowers.....	f.oz.	1½
Water	f.oz.	10
Alcohol	f.oz.	48

XXII

Oil of bergamot.....	f.dr.	6
Oil of lemon.....	f.dr.	3
Oil of orange.....	f.dr.	1
Oil of rosemary.....	f.dr.	1
Terpineol	f.dr.	2
Tincture of Siam benzoin.....	f.oz.	1
Water	f.oz.	6
Alcohol, to make.....	f.oz.	64

Verbena Water.

XXIII.

Oil of verbena.....	f.dr.	6
Oil of orange.....	f.dr.	1½
Oil of lemon.....	f.dr.	1½
Oil of neroli.....	m.	25
Essence of jasmine.....	f.oz.	1½
Stronger tincture of orris.....	f.oz.	3
Rose water.....	f.oz.	6
Alcohol	f.oz.	52

Violet Water.

This is an article of similar character to those previously mentioned but having, or at least it should have, the violet odor predominant. Instead of the washings of violet pomade, it is made with oil of orris or ionone. It is usually expected to be a green color. This may be imparted by a trace of chlorophyll. Like all liquid perfumes, violet water should be stored away for some time to allow the odor to develop; this is especially true if it contains ionone.

XXIV.

Solution of ionone, 10%....	f.dr.	1
Oil of sandalwood.....	f.dr.	2
Oil of neroli.....	m.	30
Oil of bitter almond.....	drops	6
Oil of spearmint.....	drops	12
Tincture of artificial musk.....	f.dr.	1
Tincture of civet.....	f.dr.	2
Water	f.oz.	16
Alcohol	f.oz.	48

Tincture of the genuine musk may be used but the artificial is to be preferred.

XXV.

Spirit of ionone, 10%.....	f.dr.	2
Orange flower water.....	f.oz.	4
Rose water.....	f.oz.	4
Distilled water.....	f.oz.	16
Alcohol	f.oz.	36

EAU VEGETAL (Vegetal).

Eau vegetals are the same as toilet waters with 5% of glycerin added. Eau vegetal lilac or violet for example is lilac or violet water toilet containing 5% of glycerin. The vegetals are largely used by barbers.

BAY RUM (Spirit of Myrcia).

This is also a toilet water the distinctive odor of which is oil of bay leaves. The original "bay rum" was made by distilling bay leaves with rum, and was obtained from different West India islands where the bayberry tree is indigenous. Instead of the distilled product it is customary to make a solution of oil of bay in alcohol, modifying the odor by such additions as rum and various essential oils. Water is added for cheapening purposes and the mixture is finally colored yellowish or yellowish-green by the addition of borax, ammonia, or other alkalies, saffron, bay leaves, etc.

Regarding the composition of artificial bay rum, there are almost as many formulas as there are manufacturers, the variation extending to the proportion of oil of bay and alcohol, the kind and number of modifying constituents and the coloring agent. This preparation was recognized by the U. S. P., 1890.

I.

Oil of bay.....	f.dr.	4
Oil of orange.....	m.	15
Oil of pimento.....	m.	15
Alcohol	f.oz.	39
Water	f.oz.	25

Mix the oils and alcohol, add the water, set aside in a well-stoppered bottle for 8 days and filter.—U. S. P. 1890, and N. F. Appendix.

II.

Oil of bay.....	f.dr.	1¼
Oil of pimento.....	m.	20
Acetic ether.....	f.dr.	2½
Stronger tincture of orris.....	f.dr.	4
New England rum.....	f.oz.	8
Alcohol	f.oz.	32
Water, to make.....	f.oz.	64

Mix the oils and tincture with the alcohol, add the rum, then the water, and filter.

III.

Oil of bay.....	f.dr.	3
Oil of orange.....	m.	15
Oil of pimento.....	m.	15
Tincture of Siam benzoin.....	f.dr.	2
Orris root, powder.....	av.oz.	¾
Water	f.oz.	32
Alcohol	f.oz.	32

Dissolve the oils in the alcohol, add the tincture and orris root, shake well, add the water gradually with agitation, and filter clear.

A cheap bay rum suitable for barbers' use may be made as follows:

IV.

Oil of bay.....	f.dr.	2
Acetic ether.....	f.dr.	1
Alcohol	f.oz.	24
Water	f.oz.	40
American saffron.....	gr.	15
Talcum, powder.....	av.oz.	1

Mix the oil, ether, alcohol, and talcum, agitate thoroughly, add the water and saffron, agitate for 24 hours, and filter clear.

ORGEAT RUM.

Oil of bitter almond.....	f.dr.	1
Tincture of vanilla.....	f.oz.	2
Alcohol	f.oz.	24
Water	f.oz.	38
Tincture of cudbear.....	f.dr.	2

Mix and filter clear if necessary.

This has been suggested to use in place of bay rum.

VIOLET WITCH HAZEL.

This is an agreeable variation of the ordinary witch hazel extract and may be used in place of bay rum, especially by barbers for use after shaving:

Oil of orris, liquid.....	f.dr.	1
Essence of jasmine.....	f.oz.	4
Hamamelis water.....	pints	4

Mix and filter clear through talcum.

If desired, it may be colored pale green with chlorophyll.

**TOILET AROMATIC VINEGARS
(Acetic Perfumes).**

These preparations consist of fragrant essential oils and balsams and other pleasantly odorous substances combined with alcohol and acetic acid. The amount of fragrant substances used should not be so large as to disguise the odor of the acid. The acetic acid adds a refreshing quality to these perfumes which is absent from the toilet waters. These preparations were originally employed as a prophylactic against infectious diseases for which purpose they were of course entirely ineffective. Later on account of their pungent and reviving odor they were used in the form of a small saturated sponge contained in ladies' vinaigrettes which are now generally supplanted by the ammoniated "smelling salts" bottles. If wanted for vinaigrettes, these preparations should be made quite strong with acetic acid and the fragrant substances. Now they are employed for washing in baths or hand basins and are sprinkled about sick rooms to impart a pleasant fragrance. They are also applied to the forehead for headache and fainting spells.

Good vinegar or a pure form of acetic acid may be used for these perfumes. If either of these possess anything of an empyreumatic odor, they are unfit for use.

These preparations may be known simply as toilet or aromatic vinegar, or as lavender, rosemary, eucalyptus, cologne, witch hazel, cosmetic, floral, antiseptic, hygienic, preventive, etc., vine-

gar according to fancy or according to the main constituents, or may be known by the French title "vinaigre de toilette." Properly speaking, aromatic vinegar is a preparation strong with acetic acid for vinaigrettes, while toilet vinegar is weaker and is intended for the sick room and for bathing.

I.

Oil of lavender flowers.....m.	15
Oil of rosemary.....m.	15
Oil of juniper berries.....m.	15
Oil of peppermint.....m.	15
Oil of cassia.....m.	15
Oil of lemon.....m.	30
Oil of clove.....m.	30
Alcohol.....fl.oz.	11¼
Acetic acid, U. S. P.....fl.oz.	11¼
Distilled water, to make....fl.oz.	60

Dissolve the oils in the alcohol, add the acid, and lastly the water. Warm the mixture for several hours to a temperature not exceeding 76° C., taking care there is no loss by evaporation; set it aside for a few days, occasionally agitating, and filter.—N. F.

II. The aromatic vinegar of the German Pharmacopeia differs from the preceding only in containing 50% more of each of the oils.

III.

Oil of lavender.....drops	15
Oil of rosemary.....drops	15
Oil of neroli.....drops	18
Oil of lemon.....fl.dr.	2
Oil of bergamot.....fl.dr.	2
Oil of orange.....fl.dr.	2½
Tincture of musk.....drops	15
Tincture of Siam benzoin...fl.oz.	1
Tincture of tolu.....fl.oz.	1
Glacial acetic acid.....fl.oz.	16
Alcohol.....fl.oz.	45

Mix the oils and tinctures with the alcohol, add the acid, let the mixture stand for several days and filter.

IV.

Peppermint.....gr.	365
Rosemary.....gr.	365
Sage.....gr.	365
Angelica root.....gr.	30
Zedoary.....gr.	30
Clove.....gr.	30
Vinegar.....fl.oz.	32

This is the formula of the Austrian Pharmacopeia. The whole is to be macerated for several days, then expressed.

V.

Oil of cassia.....m.	30
Oil of lavender flowers...fl.dr.	1
Oil of clove.....fl.dr.	1½
Oil of bergamot.....fl.dr.	2½
Oil of lemon.....fl.dr.	2½
Tincture of tolu, U. S. P....m.	160
Tinct. of benzoin, U. S. P.fl.oz.	3¼
Glacial acetic acid.....fl.oz.	2½
Alcohol.....fl.oz.	32
Water, to make.....fl.oz.	64

Mix the oils and tinctures with the alcohol, then add the acid and water, shake well, and filter clear.

This is the formula of the British Pharmaceutical Codex for toilet vinegar.

VI.

Oil of cinnamon.....m.	50
Oil of bergamot.....m.	100
Oil of thyme, white.....m.	100
Oil of lavender flowers...fl.dr.	3¼
Oil of orange.....fl.dr.	3½
Oil of clove.....fl.dr.	6½
Glacial acetic acid, to make.fl.oz.	8

Mix the oils, add the acid, shake well, and filter.

This is the formula of the British Pharmaceutical Codex for aromatic vinegar. This preparation is intended for vinaigrettes.

SICK-ROOM PERFUMES.

These perfumes consist of a volatile disinfectant dissolved in a toilet water and their purpose is to combine the two desirable properties of disinfection and fragrance. An excellent preparation of this kind is that mentioned under Antiseptic Cologne, which see. Any toilet water may be used, to which has been added suitable disinfectants. For this purpose an oil of pine or fir and bornyl acetate may be added to a toilet water; or a mixture of eucalyptus oil or eucalyptol and formaldehyde, or of eucalyptus oil and chinisol may be used. This water should be sprayed about the room with an atomizer or cloths wetted with the liquid may be suspended in the room.

Aromatic Vapor for Sick Rooms.

The following has been suggested:

Eucalyptol	f.dr.	5
Oil of thyme, white.....	f.dr.	2½
Oil of lemon.....	f.dr.	2½
Oil of lavender flowers.....	f.dr.	2½
Alcohol, to make.....	f.oz.	16

In using this, place a teaspoonful in a pint of water in an open vessel and apply heat. More of the aromatic liquid may be added afterwards to the boiling water if desired.

Disinfecting Spray for Sick Rooms.

The following may be used for this purpose. It is of course in no sense an aromatic or perfume.

Guaiacol	f.dr.	2
Eucalyptol	f.dr.	1
Menthol	dr.	1
Thymol	gr.	30
Oil of wintergreen.....	f.dr.	7
Oil of peppermint.....	f.dr.	5

This is sprayed about the room with an atomizer.

SOAP PERFUMES.

The following mixtures of odoriferous substances are used for perfuming toilet soaps; 1 to 2 ounces are required for perfuming 10 pounds of soap.

I.

Oil of patchouly.....	f.dr.	4
Oil of clove.....	f.dr.	4
Oil of sandalwood.....	f.oz.	1
Oil of lavender flowers.....	f.oz.	1
Oil of bergamot.....	f.oz.	1
Oil of rose geranium.....	f.oz.	2
Tincture of artificial musk...	f.oz.	1

II.

Oil of petitgrain.....	f.oz.	1
Oil of sassafras.....	f.oz.	1
Oil of bergamot.....	f.oz.	1
Oil of clove.....	f.oz.	1½
Oil of thyme, white.....	f.oz.	1½
Oil of cassia.....	f.oz.	1½

III.

Oil of cedarwood.....	f.dr.	1
Oil of lavender flowers.....	f.oz.	1
Oil of rosemary.....	f.oz.	1
Oil of thyme, white.....	f.oz.	1
Oil of nutmeg.....	f.oz.	1
Oil of lavender flowers.....	f.oz.	1

SOLID OR DRY PERFUMES.

Perfumes in the dry condition are less popular than liquid perfumes in spite of

the fact that they are of very ancient use whereas the liquids are quite modern products. The oldest civilized peoples, such as the Egyptians, Babylonians, Assyrians, Persians and Jews, used dried leaves, dried flowers, barks, woods, gum-resins, etc., as perfumes and incense.

There have been no especial modern improvements in the manufacture of dry perfumes whereas the liquids are constantly undergoing improvement and new combinations of odors are being produced.

Among the dry perfumes are sachet powders which are in fine powder, pot pourris in coarse powder, and tablet perfumes.

SACHET POWDERS.

Sachet powders are either in fine powder or in a coarse (about No. 40) powder. The former is known in the trade as the powder, the latter as the granular form. Sachet powders have been devised to represent in a fair degree all the popular odors but the mixtures soon lose their freshness even if kept in well-stoppered bottles. However, a good sachet powder is a very useful and dainty form of perfume as it may be enclosed in fancy little bags (called sachets, whence the name) and put with the linen in bureau drawers, in clothes closets, in handkerchief, glove and jewel boxes, in writing cabinets, and the various articles of clothing and stationery will for a long time diffuse a delicate fragrance which is really more agreeable and delightful but yet less insistent or pronounced than that imparted by the "extracts." Sachet powders never cause the user to seem "loud" or vulgar as do most of the "extracts" unless the latter are used very sparingly.

Sachet powders are composed of such substances as orris root, sandalwood, rose petals, vanilla and tonka beans, lavender flowers, vetiver, orange peel, benzoin, musk, civet, etc., to which are added vanillin, cumarin and various fragrant essential oils and liquid synthetic perfumes. Such substances as vanilla

and tonka may be cut up and then bruised in a mortar with granulated orris root until reduced to a suitable condition. Musk and civet should be triturated with orris root to a proper condition before adding to the other ingredients. Benzoin may be reduced to the correct degree of fineness in a mortar. Lavender flowers, rose petals and some other substances may be ground sufficiently fine in a drug mill. Other solid substances may be reduced to a sufficiently fine condition by means which should readily suggest themselves to the competent pharmacist. After all the solid materials have been reduced to a proper state of division, the liquid ingredients should be added and thoroughly incorporated.

Another way to make sachet powders in the granular form as may be noticed by those who have had occasion to observe the products of perfume houses is to make a body or vehicle of orris root in about No. 40 powder. This is colored with alcoholic solutions of aniline dyes, allowing to dry, mixing various colors together and adding some uncolored root by way of variety, and finally perfuming. The perfume is to consist of the oils, tinctures, etc., used for making handkerchief extracts (see Handkerchief Extract Formulas), omitting the alcohol from the latter. In this way sachet powders of good appearance and odor may readily be made. Not enough odorous material should be added to cause the powder to leave an oily stain. Similarly sachet powders may be freshened from time to time by the addition of a small amount of the corresponding "extract," viz., violet extract to violet sachet powder, etc.

To obtain good sachet powders the best materials only should be employed, as in no other way can a satisfactory product be obtained. All the solids, orris, rose petals, orange peel or flowers, vanilla, etc., should be perfectly fresh and of good quality; the volatile oils and

synthetics should be of superior quality as described in previous paragraphs.

After being mixed, sachet powders should be allowed to stand a few days to permit the odors to blend thoroughly. They should be preserved in rather small (about 4-ounce), well-stoppered bottles, to prevent both evaporation and oxidation, in location not exposed to excessive heat or light.

Cassie or Acacia Sachet.

Cassie flowersav.oz. 8
Orris rootav.oz. 8

Pass each separately through a mill to reduce to tolerably fine powder, then mix, and pass through the mill again, to reduce to finer powder.

Clove Pink Sachet.

Orris rootav.oz. 8
Lavender flowersav.oz. 4
Patchouly leavesav.oz. 2
Clovesav.oz. 1
Deer-tongue leavesav.oz. 1
Pimentoav.oz. 1½
Muskgr. 8
Oil of rose.....drops 40
Oil of lavender flowers....drops 40
Oil of neroli.....drops 48
Oil of sandalwood.....drops 80

Mix the first six ingredients, grind to a moderately fine powder, triturate the musk to an intimate mixture with a portion of this powder, add the remainder of the powder and the oils, and mix the whole thoroughly.

If the deer-tongue is not available it may be replaced by ¼ or ½ as much tonka.

Essence Bouquet Sachet.

Orange peel, recently dried.av.oz. 4
Sandalwoodav.oz. 4
Rose petalsav.oz. 4
Orris rootav.oz. 4
Muskgr. 2
Cumaringr. 4
Vanillingr. 4
Oil of rose.....drops 12
Oil of bergamot.....drops 12
Oil of neroli.....drops 5
Oil of ylang ylang.....drops 5
Oil of cassia.....drops 5
Oil of rose geranium.....drops 4
Oil of bitter almond.....drops 3
Essence of jasmine.....fl.oz. 1

Mix the first four ingredients, grind

to powder in a mill, triturate the musk, cumarin and vanillin with a portion of the ground material, add to the remainder of the powder, now add the oils and essence, and again mix well.

Field Flowers Sachet.

Calamus root	av.oz. 4
Lavender flowers	av.oz. 4
Rose petals	av.oz. 4
Caraway	av.oz. 2
Marjoram	av.oz. 2
Peppermint	av.oz. 2
Thyme	av.oz. 2
Rosemary	av.oz. 1
Cloves	dr. 5½
Musk	gr. 8

Reduce the various solids to suitably fine powder by grinding in a drug mill; rub up the musk thoroughly well with a small portion of this powder, then incorporate the remainder of the powder.

Frangipanni Sachet.

I.

Orris root	av.oz. 8
Rose petals	av.oz. 8
Vanilla	av.oz. ½
Benzoin	av.oz. 1½
Oil of sandalwood.....	fl.dr. 2
Oil of neroli.....	fl.dr. 1
Oil of lavender flowers....	fl.dr. 1
Oil of bergamot.....	fl.dr. 1
Oil of cassia.....	drops 24
Oil of pimento.....	drops 40
Oil of rose.....	drops 32

Grind the orris and rose separately to coarse powder, mix, pass through the mill again to reduce to somewhat finer powder, triturate the vanilla to powder with a portion of this mixture, also reduce the benzoin to powder, mix the whole, add the oils, and triturate to an intimate mixture.

II.

Orris, powder	av.oz. 12
Vetivert	av.oz. 1
Sandalwood	av.oz. 1
Vanilla	av.oz. 1
Tonka	av.oz. ½
Oil of neroli.....	drops 15
Oil of bergamot.....	drops 15
Oil of rose geranium.....	drops 15
Oil of sandalwood.....	drops 10
Oil of rose.....	drops 8
Tincture of musk.....	fl.dr. 2
Tincture of civet.....	fl.dr. 1

Prepare like the preceding.

Heliotrope Sachet.

I.

Orris root, cut.....	av.oz. 8
Red rose petals.....	av.oz. 4
Tonka	av.oz. 2
Vanilla	av.oz. 1
Musk	gr. 20
Oil of bitter almond.....	drops 2

Mix the first two ingredients and grind to powder in a mill; contuse the vanilla, tonka, and sufficient of the orris root together until the first two are reduced to a fine powder; triturate the musk and oil, the latter first dissolved in a small amount of alcohol, with a portion of this powder, add the remaining ingredients, and mix the whole intimately in a mortar.

II.

Tonka beans	av.oz. 4
Orris root	av.oz. 4
Rose petals	av.oz. 4
Benzoin	av.oz. 1¼
Vanillin	dr. 1
Heliotropin	dr. 3
Oil of rose geranium.....	m. 20
Musk residue	dr. 1½

Reduce the tonka, orris and rose petals to powder by grinding in a mill, contuse the benzoin in a mortar, triturate vanillin and musk residue with a portion of the powdered material until well mixed, then incorporate the oil and heliotropin, and mix the whole together thoroughly.

The musk residue is what remains of the musk after extraction with alcohol in making the tincture.

Jockey Club Sachet.

I.

Lavender flowers	av.oz. 2
Rose petals	av.oz. 6
Orris	av.oz. 8
Vanilla	dr. 2
Musk	gr. 16
Essence of jasmine.....	fl.oz. 1
Oil of sandalwood.....	drops 80
Oil of rose.....	drops 40
Oil of neroli.....	drops 20

Reduce the first three ingredients to powder by grinding in a mill, contuse the vanilla with a portion of the ground mixture to powder; also triturate the musk with a portion of the powder intimately, add the oils and essence, and

mix the whole thoroughly by trituration in a mortar.

II.

Orris, powder	av.oz. 12
Sandalwood, ground	av.oz. 2
Oil of bergamot.....	fl.dr. 2
Oil of rose.....	drops 8
Tincture of musk.....	fl.dr. 4'
Tincture of civet.....	fl.dr. 2

Mix the orris and sandal, add the other ingredients, and triturate until the whole is thoroughly incorporated.

Lavender Sachet.

I.

Lavender flowers	av.oz. 12
Benzoin	av.oz. 3
Oil of lavender flowers....	fl.dr. 1½

Reduce the lavender and benzoin each separately to fine powder, add the oil and triturate the whole thoroughly until well mixed.

II.

Lavender flowers	av.oz. 12
Benzoin	av.oz. 3
Oil of bergamot.....	fl.dr. 1¼
Oil of lavender flowers....	fl.dr. 2½

Prepare like the preceding.

Marechale Sachet.

Sandalwood	av.oz. 6
Orris root	av.oz. 5
Rose petals	av.oz. 4
Clove	av.oz. 3
Cassia bark	av.oz. 3
Musk	gr. 4

Reduce the first five ingredients to moderately fine powder by grinding in a mill, add the musk and mix well by trituration.

Millefleurs Sachet.

Orris	av.oz. 8
Lavender flowers	av.oz. 3
Coriander	av.oz. 2
Clove	av.oz. 1
Cassia buds	av.oz. 1
Benzoin	dr. 2
Nutmeg	dr. 2
Vanilla	av.oz. ½
Musk	gr. 20
Oil of sandalwood.....	drops 40
Oil of rose.....	drops 20
Oil of neroli.....	drops 16
Oil of lavender (English).....	drops 16
Oil of patchouly.....	drops 8
Oil of verbena.....	drops 8

Contuse the orris and nutmeg, add the lavender, clove, cassia, and coriander,

grind all together in a mill to moderately fine powder, triturate the vanilla and musk each with a portion of this powder until well mixed, contuse the benzoin to powder, mix the whole, add the oils and mix all thoroughly by trituration.

II.

Lavender flowers	av.oz. 2
Orris	av.oz. 2
Rose petals	av.oz. 2
Benzoin	av.oz. 2
Clove	av.oz. 1¼
Tonka	av.oz. ½
Vanilla	av.oz. ½
Sandalwood	av.oz. ½
Cardamon	dr. 5
Cassia bark	dr. 5
Musk	gr. 6

Grind the lavender, orris, rose petals, sandal, clove, cardamon, and cassia together in a mill to moderately fine powder, triturate the vanilla and tonka with a portion of this mixture until reduced to powder, also triturate the musk with another portion until well mixed, contuse the benzoin to fine powder, and mix the whole together thoroughly.

Musk Sachet.

Oil of rose.....	drops 15
Ammonium carbonate	gr. 7
Musk	gr. 20
Orris, powder	av.oz. 16

Mix intimately. The proportions may be altered if desired. The alkali develops the odor of the musk.

New Mown Hay Sachet.

I.

Orris	av.oz. 3
Rose petals	av.oz. 3
Orange flowers	av.oz. 1½
Musk seed	av.oz. 1½
Tonka	av.oz. 1½
Benzoin	av.oz. ½
Oil of verbena.....	drops 12
Oil of bitter almond.....	drops 12

Grind the orris, rose petals, orange flowers and musk seed together in a mill to moderately fine powder, triturate the tonka with a portion of this to fine powder, also contuse the benzoin to powder, mix all, add the oils, and mix the whole intimately by trituration.

II.

Orris, powder	av.oz.	11
Tonka	av.oz.	1½
Vanilla	av.oz.	1½
Oil of bitter almond.....	drops	2
Oil of rose.....	drops	6
Oil of bergamot.....	drops	12
Oil of rose geranium.....	drops	24
Tincture of musk.....	fl.dr.	2½

Triturate the tonka and vanilla with the orris to fine powder, add the oils and tincture, and mix well by trituration.

Opoponax Sachet.

Orris	av.oz.	8
Rose petals	av.oz.	2½
Cassie flowers	av.oz.	2½
Tonka	dr.	5
Vanilla	dr.	4
Musk	gr.	75
Oil of rose.....	drop	1
Oil of citronella.....	drops	3
Oil of lemon.....	drops	5
Oil of patchouly.....	drops	5
Oil of rose geranium.....	drops	10
Oil of bergamot.....	drops	20
Tincture of civet.....	m.	40

Mix the first three ingredients, grind to moderately fine powder in a mill, triturate the vanilla and the tonka with a portion of this powder until a fine mixture is produced, add the remainder of the ground mixture, the oils and the tincture, and mix well by trituration.

Oriental Sachet.

Orris	av.oz.	2
Calamus	av.oz.	2
Orange peel, recently dried.....	av.oz.	2
Rose petals	av.oz.	2
Musk seed	av.oz.	1
Sandalwood	av.oz.	1
Rosewood	av.oz.	1
Clove	av.oz.	½
Cassia	av.oz.	½
Benzoin	av.oz.	½
Myrrh	av.oz.	½
Tincture of ambergris.....	m.	20

Mix all but the myrrh, benzoin and tincture; grind to moderately fine powder, contuse the benzoin and myrrh to powder, mix all, add the tincture of ambergris, and triturate until well mixed.

Patchouly Sachet.

I.

Patchouly herb	av.oz.	8
Lavender flowers	av.oz.	3
Orris	av.oz.	2

Clove	av.oz.	1
Oil of bergamot.....	fl.dr.	1
Oil of patchouly.....	drops	2
Tincture of ambergris.....	m.	30
Tincture of musk.....	m.	30

Mix the first four ingredients, grind to moderately fine powder in a mill, add the other ingredients and mix well.

Peau d' Espagne Sachet.

Orris root	av.oz.	6
Sandal wood, yellow.....	av.oz.	3
Cedar wood	av.oz.	3
Lavender flowers	av.oz.	3
Benzoin	av.oz.	1
Musk residue	gr.	130
Civet residue	gr.	65
Oil of bergamot.....	fl.dr.	2
Oil of neroli, artificial.....	m.	45
Oil of jasmine, artificial.....	m.	30
Oil of verberna.....	m.	15

Reduce the orris, sandal, lavender and cedar wood to powder by grinding in a mill, contuse the benzoin in a mortar; triturate the musk and civet residues with a portion of the powder until thoroughly well mixed, incorporate the oils, and then mix all the ingredients together intimately.

The musk and civet residues are what remains of the musk and civet after extraction in the making of tinctures.

Rondeletia Sachet.

Orris	av.oz.	12
Lavender flowers	av.oz.	6
Clove	dr.	1
Musk	gr.	12
Tincture of ambergris.....	fl.dr.	2
Oil of rose.....	drops	5
Oil of rose geranium.....	drops	8
Oil of bergamot.....	drops	30
Oil of clove.....	drops	30
Oil of lavender flowers.....	drops	30

Mix the first three ingredients, grind to moderately fine powder in a mill, triturate the musk with a portion of this powder until well mixed, add this to the remainder of the powder, then add the oils and tincture, and mix the whole thoroughly.

Rose Sachet.

I.

Rose petals	av.oz.	16
Oil of rose geranium.....	drops	30
Oil of rose.....	drops	30
Tincture of ambergris.....	drops	20
Tincture of musk.....	drops	10

Grind the rose petals to moderately fine powder, add the other ingredients, and mix thoroughly.

II.

Orris	av.oz. 6
Rose petals	av.oz. 6
Sandal wood	av.oz. 1
Patchouly herb	av.oz. ½
Tincture of civet.....	fl.dr. 1
Oil of rose geranium.....	drops 8
Oil of rose.....	drops 6

Mix the orris, rose petals, sandal and patchouly, grind to moderately fine powder in a mill, add the other ingredients and mix well.

III.

Orris root	av.oz. 4
Rose petals	av.oz. 4
Rosewood	av.oz. 4
Benzoin	av.oz. 1¼
Oil of rose geranium.....	m. 100
Oil of rose, synthetic.....	fl.dr. 1

Grind the orris, rose petals and rosewood in a mill; contuse the benzoin in a mortar; triturate the oils with a portion of this powder, and mix the whole together thoroughly.

Sweet Brier Sachet.

Orris, ground	av.oz. 13
Sandal wood, ground.....	av.oz. 3
Oil of rose.....	drops 6
Oil of rose geranium.....	drops 6
Oil of bergamot.....	drops 8
Oil of lemon.....	drops 12
Oil of neroli.....	drops 12
Oil of verbena.....	drops 24
Tincture of ambergris.....	m. 45
Tincture of musk.....	m. 45

Mix the whole thoroughly.

Verbena Sachet.

Orris, ground	av.oz. 16
Oil of bergamot.....	m. 40
Oil of verbena or lemon-	
grass	fl.dr. 1
Oil of rose geranium.....	drops 16
Tincture of musk.....	m. 80

Mix the whole thoroughly.

Violet Sachet.

I.

Orris, ground	av.oz. 16
Oil of bergamot.....	drops 10
Oil of bitter almond.....	drops 7
Oil of rose.....	drops 7
Tincture of musk.....	fl.dr. 2½

Mix the whole thoroughly.

II.

Orris, ground	av.oz. 12
Benzoin	av.oz. 4
Spirit of almond.....	drops 8
Spirit of ionone, 10%.....	fl.dr. 1

Contuse the benzoin in a mortar to coarse powder, triturate the two spirits intimately with a small portion of the powdered orris, then mix all the ingredients together.

Wild Flowers Sachet.

Canada snake root.....	av.oz. 4
Coriander	av.oz. 3
Deer-tongue leaves	av.oz. 2
Lavender flowers	av.oz. 2
Patchouly leaves	av.oz. 1
Calamus root	av.oz. ½
Nutmeg	av.oz. ½
Oil of bergamot.....	fl.dr. 2½
Oil of sandalwood.....	drops 80
Oil of neroli.....	drops 40
Oil of verbena.....	drops 20
Oil of patchouly.....	drops 20
Essence of jasmine.....	fl.dr. 1

Break the nutmeg into small pieces, mix with first seven ingredients, grind the whole in a mill to moderately fine powder, add the remaining ingredients, and mix thoroughly.

If the deer-tongue is not available it may be replaced by ½ ounce of tonka bean.

Ylang Ylang Sachet.

Orange peel, recently dried.....	av.oz. 6½
Orris	av.oz. 5
Rose petals	av.oz. 5
Cumarin	gr. 1
Vanillin	gr. 2
Tincture of civet.....	drops 10
Tincture of musk.....	drops 5
Oil of ylang ylang.....	drops 15
Oil of rose.....	drops 10
Oil of bergamot.....	drops 5
Oil of rose geranium.....	drops 3
Essence of jasmine.....	fl.dr. 6

Mix the first three ingredients, reduce to moderately fine powder in a mill, dissolve the cumarin and vanillin in the remaining ingredients, and mix the whole thoroughly.

PEAU D'ESPAGNE (Spanish Leather).

Small square pieces of chamois skin or white kid are soaked in the following solution for 3 or 4 days:

Oil of rose, synthetic.....fl.dr.	4
Oil of neroli, synthetic.....fl.dr.	4
Oil of sandalwood.....fl.dr.	4
Oil of lavender flowers.....fl.dr.	2
Oil of lemon.....fl.dr.	2
Oil of cinnamon.....m.	30
Linalyl acetate.....fl.dr.	2
Cumarin.....gr.	12
Artificial musk.....dr.	1
Tincture of benzoin.....fl.oz.	3

The tincture of benzoin for this purpose should be made from 2 av. ounces of Siam benzoin and 5 fluidounces of alcohol.

Then remove the leather from the liquid, allow it to drain, spread it on a glass plate to dry, and coat one side of the leather (the rough side of the kid) with the following mixture, applying the latter by means of a brush:

Benzoic acid, sublimed.....dr.	2
Musk.....gr.	12
Civet.....gr.	12
Gum arabic.....dr.	6½
Glycerin.....fl.dr.	5
Water.....fl.oz.	1½

Rub up the musk and civet thoroughly with the acid and gum, then incorporate the glycerin and water so as to form a smooth mixture. Fold or double the leather over when the two halves will adhere to each other, and allow to dry.

This perfumed skin emits its odor for years. It is used instead of sachet bags to place in trunks, drawers, closets, writing desks, glove and handkerchief boxes, etc. Pieces of this skin are also sewed into ladies' clothing and lingerie.

GLOVE PERFUME.

To overcome the unpleasant natural odor of leather, it is suggested to place sachet bags in the glove boxes. Or a regular glove perfuming powder may be used, made of 2 parts each of powdered orris root and magnesium carbonate and 1 part of talcum. Five ounces of this powder may be perfumed with a mixture of

Heliotropin.....dr.	3
Vanillin.....gr.	100
Tincture of civet.....m.	40
Tincture of Siam benzoin..fl.dr.	2½

This makes a heliotrope odor but other odors may be made, using the in-

gredients of handkerchief extracts and omitting the alcohol from the latter.

This powder is to be sewed into little bags which are to be put inside in the gloves when the latter are not in use and are kept in the glove boxes.

PERFUME LOZENGES.

Solid perfumery in the form of lozenges are quite a novelty. They may be made by taking a suitable mixture of powders, tinting and perfuming it, making a soft mass or dough with gum and water, rolling out into sheets about ¼ or ½ inch thick, cutting into lozenges with a lozenge cutter, and finally drying. These may be carried about in the purse or hand-bag or distributed about in bureau drawers, clothes closets, writing desks, etc., like sachet bags.

For the basis of the lozenges the following will be acceptable:

Starch.....av.oz.	10
Magnesium carbonate.....av.oz.	5
Orris root, powder.....av.oz.	1
Dextrin.....av.oz.	1
Salicylic acid.....gr.	20

Mix well, add the tinting and perfuming materials, then make a soft dough with water and syrup, and roll out and cut as described before.

The salicylic acid is added for the purpose of preventing mould. Boric acid may be used instead.

For the tinting material any suitable aniline dye may be used, first dissolving it in a little alcohol. Pink or pale blue shades make the most attractive appearance.

For perfuming purposes, to each 8 ounces, the following proportions of odorous material may be added:

Heliotrope.

Heliotropin.....m.	40
Vanillin.....gr.	30
Tincture of Siam benzoin..fl.dr.	6

Mignonette.

Reseda oil, synthetic.....m.	30
Geraniol.....m.	20
Oil of bergamot.....m.	80
Tincture of Siam benzoin..fl.dr.	6

Rose.

Oil of rose, artificial.....	drops 15
Oil of rosewood.....	m. 20
Oil of rose geranium.....	m. 75
Tincture of artificial musk....	m. 40
Tincture of Siam benzoin...f.l.dr.	4

Lily.

Vanillin	gr. 4
Heliotropin	drops 15
Oil of neroli, synthetic....	drops 5
Oil of rose geranium.....	m. 40
Tincture of artificial musk....	m. 40
Tincture of Peru balsam...f.l.dr.	2

Violet.

Ionone, 10% solution.....	f.l.dr. 3
Oil of ylang ylang.....	drops 25
Tincture of musk.....	m. 80
Tincture of Siam benzoin...f.l.dr.	4

The amount of perfume may be varied; it may be much increased if desired.

TABLET OR FROZEN PERFUME.

The novelty sold under this name is prepared by melting paraffin in a water bath, adding odorous substances when nearly cool, and pouring into small molds to form tablets of any desired size. The following formulas may be employed in preparing them, each of the mixtures given being sufficient for 4 av. ounces of paraffin.

These are intended to be put into bureau drawers, clothes closets, writing desks, etc., in place of sachet bags.

I.

Oil of bergamot.....	f.l.dr. 2
Oil of lavender flowers....	f.l.dr. 2
Oil of clove.....	f.l.dr. 1
Oil of rose geranium.....	m. 20
Vanillin	gr. 10

II.

Oil of neroli.....	m. 30
Oil of rose geranium.....	m. 30
Oil of lavender flowers....	m. 30
Oil of bergamot.....	f.l.dr. 1
Oil of clove.....	drops 2
Heliotropin	m. 10

III.

Oil of linaloe.....	f.l.dr. 2
Oil of bergamot.....	m. 20
Oil of lemon.....	m. 20
Heliotropin	m. 20

IV.

Oil of ylang ylang.....	f.l.dr. 2
Oil of neroli.....	f.l.dr. 1

Oil of sandalwood.....	m. 30
Cumarin	gr. 20
Tincture of musk.....	m. 20

V.

Oil of bergamot.....	f.l.dr. 4
Oil of lemon.....	f.l.dr. 1
Oil of orange.....	f.l.dr. 1
Oil of neroli.....	m. 30
Oil of rose geranium.....	m. 20
Oil of rosemary.....	m. 20
Oil of lavender flowers....	m. 20

POT POURRIS.

These are mixtures of odorous substances, in rather coarse condition, to be placed in open jars, called pot pourri jars, and intended for scenting rooms. The individual particles should be of about the size of a split pea, and such substances as orris, benzoin, etc., should be reduced to this size by appropriate means. Rose petals are the basic ingredient, these forming the body or bulk of the mixture. In making good pot pourri mixtures the best materials are required.

Extra perfume, such as an "extract," may be added to these pot pourris if desired.

I.

Lavender flowers	av.oz. 4
Orris	av.oz. 4
Rose petals	av.oz. 4
Clove	av.oz. 1
Cinnamon	av.oz. 1
Siam benzoin	av.oz. 1
Pimento	av.oz. 1
Table salt	av.oz. 2
Vanilla	av.oz. 3/4

Musk	gr. 100
Oil of bergamot.....	drops 30
Oil of lemon.....	drops 30
Oil of lavender flowers...	drops 15
Oil of sandalwood.....	drops 15
Oil of rose geranium....	drops 15
Oil of rose.....	drops 2
Tincture of ambergris.....	m. 30

Reduce the orris, rose petals, clove, cinnamon, benzoin, pimento and vanilla to particles of suitable size, add the lavender, salt and musk, and then the oils and tincture, and mix well.

II.

Lavender flowers	oz. 8
Rose petals	oz. 4
Vanilla	dr. 1
Clove	dr. 1
Storax	dr. 1

Benzoindr. 1
 Ambergrisgr. 20
 Oil of rose.....drops 20
 Prepare like the preceding.

SMELLING SALTS (Ammoniated Perfumes).

Under the name of "smelling salts," "inexhaustible salts," "Preston salts" and "pungent" there are moist, granular preparations which are aromatized and give off a fragrant odor in connection with the pungent odor of ammonia. Originally these consisted of sponge cut into fine pieces, contained in a wide-mouthed bottle or a vinaigrette, which was saturated with a mixture of ammonia water or spirit of ammonia and fragrant material. Only sufficient liquid was used to saturate the sponge so that when the vessel was inverted none of it would exude. To make a neat-looking product, the pieces of sponge were to be of uniform size and of a light and uniform color.

Nowadays other substances are used for the sponge such as ammonium carbonate in a coarsely powdered condition. Fine powder should be removed by means of a sieve. There should also be none of the fine powder with which it becomes covered on exposure to the air. Only the translucent pieces should be used as these make the best "salts" and they make a handsome appearance. Instead of ammonium carbonate, crystalline potassium sulfate in small pieces is used, it having apparently been found quite satisfactory. Various porous substances will suggest themselves for this purpose, such as small pieces of white pumice stone but this does not give the handsome appearance of the previously mentioned substances. A cheaper article of smelling salts may be made by making a mixture of ammonium chlorid and potassium carbonate or lime which slowly evolves ammonia. However, this is not entirely satisfactory and does not make a nice appearance.

After the bottle has been filled with sponge, ammonium carbonate, potassium

sulfate or whatever else is used, a small amount of ammonia water or spirit of ammonia mixed with perfume is poured over the contents of the bottle. Spirit of ammonia is to be preferred as its alcoholic character makes it a perfect solvent for the essential oils, pomade essences, synthetics, etc., used for the perfume. Not all perfuming agents are satisfactory for use in smelling salts; lavender has become popular, while musk, civet and other "strong" odors are usually avoided.

These preparations are usually dispensed in small wide-mouthed bottles which can be well closed; sometimes ornamental glass containers are used but they are valueless for holding these perfumes unless they can be securely closed with glass stoppers when not in use.

These "salts" are used by inhalation in the headaches and fainting spells of ladies. They may be "freshened" or strengthened occasionally by adding a small portion of ammonia water, or, better, of the original mixture of spirit of ammonia and perfume.

The following are some of the formulas that are in use:

I.

Oil of clove.....drops 10
 Oil of lavender flowers....drops 30
 Oil of bergamot.....fl.dr. 1
 Stronger water of ammonia.fl.oz. 2

Fill the smelling bottles with coarsely powdered ammonium carbonate and add to the salt as much of the ammonia and oils as it will absorb.

II.

Oil of lemon.....fl.dr. 1
 Oil of lavender.....m. 30
 Oil of clove.....drops 10
 Stronger water of ammonia.fl.oz. 3

Fill the smelling bottles with crystallized potassium sulfate and pour into each bottle as much of the ammonia mixed with the oils as the salt can retain without spilling. This makes a much prettier looking smelling salt than ammonium carbonate, and as it does not cake together like it, the bottle need not be emptied when the ammonia has

evaporated. All that is necessary is to fill it up again with the aromatized ammonia.

III.

Ammonium carbonateav.oz.	12
Ammonia waterfl.oz.	1½
Oil of lavender flowersfl.dr.	1
Oil of bergamotm.	30
Oil of lemonm.	15
Tincture of muskm.	30

Prepare like any of the preceding. Spirit of ammonia is to be preferred to the water as it dissolves the oils.

IV.

Camphordr.	3
Tincture of muskfl.dr.	6
Isoeugenolm.	15
Oil of lemonm.	30
Oil of lavender flowersm.	60
Oil of bergamotm.	75
Alcoholfl.oz.	4
Ammonia waterfl.oz.	4

Prepare like any of the preceding.

V.

Ammonium chloridav.oz.	7
Potassium carbonateav.oz.	9
Oil of lavender flowersfl.dr.	4
Oil of lemonfl.dr.	1½
Oil of bergamotm.	30
Oil of clovem.	10
Ammonia watersufficient	

Triturate the ammonium chlorid and potassium carbonate together, add the oils, then incorporate enough ammonia water to moisten, and pack into bottles.

This does not make as neat an appearance as the preceding.

Lavender Smelling Salts.

VI. This may be made by filling suitable bottles with small, translucent pieces of ammonium carbonate and adding the required amount of a solution of 1 fluidram of oil of lavender flowers in 2 fluidounces of spirit of ammonia. If the spirit is not at hand, use a mixture of ½ ounce of stronger water of ammonia and 1½ of alcohol.

VII. Or use the following:

Oil of lavender, Mitchamm.	80
Oil of bergamotm.	40
Oil of rose, syntheticdrop	1
Isoeugenolm.	15
Tincture of muskm.	50
Alcoholfl.oz.	3
Ammonia waterfl.oz.	5

Add this liquid to the ammonium carbonate or potassium sulfate in a suitable container.

Menthol Smelling Salts.

This may be made by putting coarsely powdered ammonium carbonate into a suitable container and then adding a sufficient amount of menthol in crystals.

Violet Smelling Salts.

This may be prepared by placing crushed translucent pieces of ammonium carbonate into a suitable container and adding a sufficient amount of a mixture of violet extract and stronger water or, better, spirit, of ammonia. The liquid may be tinted green with chlorophyll.

Other odors may be made, such as heliotrope, by using the corresponding oil or extract.

FUMIGATING PREPARATIONS.

These preparations differ from any of the preceding in that their odor is not developed until they are ignited (except the vinegars). They are perhaps the oldest form of perfume if so they may be called. The burning of fragrant substances or "incense" is one of the oldest practices of mankind and was chiefly of a religious or ceremonial character. In the middle ages these substances were used to prevent or drive away disease and to destroy foul odors caused by disease and otherwise. They are still used to overcome bad odors and to act as disinfectants but they are probably valueless for the latter purpose. Sandalwood, olibanum, myrrh, benzoin, etc., are common ingredients. The odor they produce is balsamic or spicy, not at all of a flowery character.

The different kinds of fumigating preparations are pastilles, powders, paper, essences and vinegars.

Fumigating Pastilles.

These are cone-shaped bodies produced by mixing either red sanders or wood charcoal with potassium nitrate, various odorous and odor-producing substances, and mucilage, and making a mass which may be divided and formed

by hand into cones like a rectal suppository, after which they should be dried. Or the cones may be formed by means of a pastille machine. They should be about $\frac{3}{4}$ to 1 inch long and should have a flat bottom so they will stand up. When used the apex is ignited.

Red saunders is used for making the red pastilles while wood charcoal produces the black variety. Potassium nitrate is added to facilitate the burning.

They are frequently burned in rooms to keep away insects like mosquitoes and flies.

I.

Wood charcoal or red saundersav.oz. 6
Benzoinav.oz. 1
Cascarillaav.oz. 1
Myrrhdr. $2\frac{1}{2}$
Potassium nitrateav.oz. $1\frac{1}{2}$
Oil of nutmeg.....fl.dr. 3
Oil of clove.....fl.dr. 3
Mucilage of tragacanth....sufficient

Powder the benzoin, cascarilla and myrrh, mix with the powdered charcoal or saunders, add the oils, then the potassium nitrate dissolved in a little hot water, make a mass with the mucilage, divide and form into cones, and then dry the latter.

II.

Wood charcoal or red saunders, in powder.....av.oz. 3
Potassium nitrate, powder....dr. 3
Oil of thyme.....m. 15
Oil of caraway.....m. 15
Oil of rose.....m. 15
Oil of clove.....m. 15
Oil of sandalwood.....m. 15
Oil of lavender flowers.....m. 15
Mucilage of tragacanth....sufficient
Mix all and make pastilles as in Nos. I and II.

Fumigating Powder or Species.

While being similar to the pastilles, fumigating powder is of more variegated composition than the former. It contains various woods, barks, and gum resins, besides various colored flowers which impart a handsome appearance. No powdered charcoal is used and frequently no potassium nitrate. The for-

mer detracts from the appearance of the product while the latter is usually considered not necessary. To the powder is added a mixture of aromatic oils and tinctures to make it more fragrant. A still finer appearance may be imparted to the powder by adding orris root in about No. 20 to 40 powder which has been tinted various colors with aniline dyes dissolved in alcohol, also adding some uncolored orris root.

The mixture should be in the form of a coarse powder, free from any fine powder as well as from large coarse pieces. It should be preserved in well-stoppered bottles.

Fumigating powder is used for the same purposes as fumigating pastilles. In using it, sprinkle it on a hot stove or on live coals.

I.

Corianderav.oz. $1\frac{1}{2}$
Cassia barkav.oz. $1\frac{1}{2}$
Cascarillaav.oz. $1\frac{1}{2}$
Lavender flowersav.oz. $1\frac{1}{2}$
Peony flowersav.oz. $1\frac{1}{2}$
Orris rootav.oz. $1\frac{1}{2}$
Juniper berriesav.oz. $1\frac{1}{2}$
Rose petalsav.oz. $1\frac{1}{2}$
Blue flowersav.oz. $1\frac{1}{2}$
Calendula flowersav.oz. $1\frac{1}{2}$
Cloveav.oz. $1\frac{1}{2}$
Oil of bergamot.....fl.dr. $2\frac{1}{2}$
Oil of lemon.....fl.dr. $2\frac{1}{2}$
Oil of lavender flowers.....m. 15
Oil of clove.....m. 15
Oil of cassia.....m. 15
Tincture of ambergris....drops 12
Tincture of musk.....drops 6
Tincture of benzoin.....fl.dr. 4

Mix the drugs, reduce to coarse powder, and thoroughly incorporate with the oils and tinctures which have previously been well mixed.

II.

Sandalwood, yellowav.oz. $4\frac{1}{2}$
Sassafrasav.oz. 3
Cinnamonav.oz. 1
Cloveav.oz. 1
Cascarillaav.oz. $\frac{1}{2}$
Potassium nitrateav.oz. $\frac{1}{2}$
Waterfl.oz. 8
Storaxav.oz. $2\frac{1}{2}$
Tolu balsamav.oz. $2\frac{1}{2}$
Etherfl.oz. 5
Benzoinav.oz. $2\frac{1}{2}$

Olibanumav.oz. 2
 Juniper berriesav.oz. ½

Reduce the first five ingredients to a coarse powder, free from dust, then thoroughly impregnate it with a solution of the potassium nitrate in the water, and dry the mixture thoroughly. Dissolve the storax and balsam of tolu in the ether, and evenly and thoroughly saturate the above, after which dry quickly and immediately add the last three ingredients, previously reduced to coarse powder.

Fumigating Paper.

I.

Oil of rose geranium.....fl.oz. 1
 Oil of mace.....fl.oz. 1
 Oil of Ceylon cinnamon...fl.oz. 1
 Storaxav.oz. 1
 Peru balsamgr. 15
 Tincture of ambergris.....m. 75
 Alcoholfl.oz. 1

Soak blotting paper in this mixture and then allow it to dry. Cut the paper into squares of about 3 by 3 inches.

In using, heat on a warm or moderately hot stove so as to vaporize the perfume.

II.

Tolu balsamdr. 5
 Storaxdr. 1
 Peru balsamdr. 1
 Oil of cassia.....m. 30
 Oil of lavender flowers.....m. 30
 Alcoholfl.oz. 4

Dissolve the balsams in the alcohol and add the oils. Prepare the paper as in the preceding.

Fumigating Essence or Tincture.

I.

Oil of rosemary.....m. 40
 Oil of clove.....m. 40
 Oil of petitgrain.....m. 40
 Oil of lavender flowers.....m. 60
 Oil of bergamot.....m. 80
 Peru balsamm. 80
 Acetic etherm. 15
 Alcoholfl.oz. 4

Sprinkle a few drops on a hot stove or on a shovelful of live coals.

II.

Oil of cassia.....m. 15
 Oil of lavender flowers.....m. 15
 Oil of neroli.....m. 45
 Oil of clove.....m. 75

Oil of lemon.....m. 75
 Oil of bergamot.....fl.dr. 2½
 Muskgr. 1
 Storax, liquidm. 75
 Peru balsamfl.dr. 2½
 Tincture of benzoin.....fl.dr. 10
 Alcoholfl.dr. 12

Mix, let stand for several days, agitating occasionally, and filter.

It is to be used like the preceding.

Fumigating Vinegar.

Fumigating tincturefl.oz. 3¼
 Acetic etherfl.dr. 1½
 Acetic acidfl.dr. 3

Mix, and after standing in a cool place a few days filter.

In fumigating sick rooms the vinegar is vaporized either by heating it in a spoon or by pouring it upon a hot iron.

CHURCH INCENSE.

I.

Olibanumav.oz. 7
 Benzoinav.oz. 2
 Cascarillaav.oz. 1

Reduce all to coarse powder and mix well

II.

Olibanumav.oz. 8
 Benzoinav.oz. 4
 Cascarillaav.oz. 2
 Potassium nitrateav.oz. 1

Reduce all to coarse powder and mix well.

III.

Olibanumav.oz. 10
 Benzoinav.oz. 2
 Storax, dryav.oz. 1
 Cascarillaav.oz. 1½
 Potassium nitrateav.oz. ½
 Waterfl.oz. 1

Mix the first four ingredients and reduce to coarse powder, sprinkle with a solution of the potassium nitrate in the water, and allow to dry.

CHAPTER II.

FACE AND SKIN PREPARATIONS (Cosmetics).

Preparations intended mainly or entirely for the skin, viz.: Ointments and Creams, Skin Food, Toilet Milks, Toilet Lotions, Toilet Jellies, Camphor Ice, Toilet Lanolin, Almond Paste, Almond Meal, Toilet Powders, Liquid Cosmetics,

Face Bleach, Remedies for Blackheads, Freckles, Pimples, Tan, Sunburn, etc.; Rouge, Grease Paints, Depilatories, Liquid Soaps, and Shaving Creams and Powders.

COLD CREAMS.

(Synonyms: Unguentum Leniens, Emolliens or Refrigerans—Ceratum Galeni—Creme Celeste.)

Preparations known as Cold Creams are mixtures of solid fats like white wax, spermaceti, paraffin wax, petrolatum, wool-fat, with oils like sweet almond, olive, castor, cottonseed, benne, lard, paraffin, etc., and water, rose water, glycerin, distilled extract of witch hazel, etc., the whole being suitably perfumed. In preparing them the solid fat is first melted at a gentle heat, the oil is added, and then the water, glycerin, etc., previously warmed, is thoroughly incorporated with the fatty mixture, finally adding the perfume. The incorporation of the water or glycerin is by vigorous and continuous heating in a large mortar or similar vessel with a pestle, large spatula or paddle or an egg beater.

If the fatty mixture has not been heated too much and the mixture is well beaten, a beautifully white and smooth ointment results in a few minutes.

To greatly facilitate the incorporation of the water or other aqueous liquid, it is now customary to first dissolve in it a small amount of borax.

"Cold cream" was originally always made with sweet almond oil and all pharmacopeias recognizing this preparation specify this oil. However, on account of its costliness, it is frequently replaced by cheaper oils, such as cottonseed, benne, or lard oil. These oils must be of good quality and light color to produce a white "cold cream."

When made with vegetable or animal oil, "cold cream" does not keep well, it soon becoming rancid and granular. The presence of castor oil is said to improve its keeping qualities besides mak-

ing a smoother cream and one more quickly combined with the water. This oil should also be nearly odorless and colorless. However, in recent times, mineral oil is used in all "cold creams" intended for cosmetic purposes. This oil is known also as liquid petrolatum, paraffin oil, glycoline, and by many trade-marked names.

When used for the purpose of making "cold cream" this oil should be entirely odorless and as nearly colorless as it is possible to obtain it. The "cold cream" made with this oil keeps indefinitely without change, is also very cheap, and appears to be entirely satisfactory for cosmetic purposes.

The most generally used perfume for "cold cream" is rose in the form of oil of rose. This may be either the natural or synthetic product, the latter being equally as satisfactory as the former and costing much less. Other odorous substances are now also used for perfuming "cold cream"; combinations of the various synthetics prove very acceptable. Examples of such combinations are given later on.

"Cold cream" as made by different formulas varies in consistency, and various degrees of hardness or softness may be obtained by altering the proportions of wax, oil and water. Any "cold cream" may be made softer by adding more oil, even after the cream has solidified. A harder cream may be obtained by using a smaller amount of oil.

Such a preparation receives a name depending on its constitution or aroma. It may be called simply "cold cream"; if flavored with bitter almond oil, "almond cold cream"; if it contain cucumber juice, "cucumber cream, pomade, or ointment"; if witch hazel extract, "witch hazel cold cream"; if glycerin, "glycerin cold cream"; if camphor, "camphor cold cream"; lanolin, "lanolin cold cream"; salicylic acid, "salicylic or salicylated cold cream"; petrolatum, "petrolatum (or vaselin) cold cream"; violet extract or orris, "violet cold cream"; if Peru

balsam, "sultana cold cream"; boric acid and glycerin, "boroglycerin cold cream," etc. If tinted slightly with methyl violet and perfumed with lilac, it may appropriately be called "lilac cold cream." Cucumber cold cream may properly be tinted pale green with chlorophyll. Other colors may suggest themselves.

Cold Creams With Vegetable Oils.

I.

Spermaceti	av.oz.	2
White wax	av.oz.	2
Sweet almond oil.....	av.oz.	9
Stronger rose water.....	av.oz.	3
Borax	gr.	35

Reduce the spermaceti and white wax to fine shavings and melt them at a moderate heat, and add the oil and stir, continuing the heat until the mixture is uniform; then gradually add the rose water, previously warmed, and in which the borax has been dissolved, stirring the mixture rapidly and continuously until it congeals and becomes of uniform consistence.

This is the U. S. P. formula for "ointment of rose water." The presence of borax is sometimes objectionable, as when this ointment is used as a vehicle for metallic salts (*e. g.*, when combined in ointments for the eyes with mercuric oxid), hence the U. S. P. directs that when used for such purposes the borax should be omitted.

This ointment is but seldom used for cosmetic purposes. If used as a skin cream it may be aromatized by adding 5 drops of oil of rose to the above quantity. Or oil of rose geranium may be used, although this is a coarser odor. Other perfumes or fragrant oils or synthetics may be added.

II.

Spermaceti	av.oz.	4
White wax	av.oz.	3
Castor oil	av.oz.	4
Cottonseed oil	av.oz.	13
Rose water	fl.oz.	8
Borax	dr.	2

Melt the wax and spermaceti carefully, add the oils, then the rose water

previously warmed and with the borax dissolved in it, and then stir until congealed and of a creamy consistence. Various fragrant oils or synthetics may be added.

This makes a cheap cold cream.

III.

Spermaceti	av.oz.	2
White wax.....	av.oz.	2
Castor oil.....	fl.oz.	13
Sweet almond oil.....	fl.oz.	6½
Rose water.....	fl.oz.	6
Borax	gr.	75
Oil of rose.....	drops	16

Prepare like Nos. I or II.

This is a variation of No. I or the U. S. P. formula. The presence of castor oil is said to result in a product which is more permanent and has a better appearance.

IV.

White wax	av.oz.	2½
Lard	av.oz.	10
Sweet almond oil.....	fl.oz.	11
Oil of rose.....	drops	20
Oil of bergamot.....	drops	12
Oil of rose geranium.....	drops	12
Borax	dr.	1
Zinc oxid.....	dr.	5
Water	fl.oz.	8

Melt the wax carefully, then add the lard, and when it is melted, incorporate the almond oil. Also warm the water, in it dissolve the borax, rub up with the zinc oxid, and mix this with the fatty liquid, stirring vigorously in a mortar until congealed, finally adding the fragrant oils. The latter may first be dissolved in 2 fluidrams of alcohol.

The zinc oxid assists in making a pure white cream and probably adds to its cosmetic properties.

Cold Creams with Animal Oil.

Any of the cold creams made with vegetable or with mineral oil may have the vegetable or mineral oil replaced with lard oil and an equally satisfactory product will be obtained. One of the preceding formulas contain lard and in this respect differ from other formulas. See also the formulas for "cold creams with wool-fat."

Cold Creams With Mineral Oil.

Mineral oil, thereby meaning liquid petrolatum or paraffin oil, and known in the trade by a great variety of names (glycoline and mineral glycerin are also used), some of which are trade-marked, has largely supplanted sweet almond and the other cheaper vegetable oils. The product is cheap and of good consistency and appearance, and it keeps indefinitely without spoiling. The only objection to it is a slight bluish fluorescence. The mineral oil used should be entirely odorless and as free from color and fluorescence as it is possible to obtain it. A "crystal white" oil is said to be now available.

Any of the preceding formulas may be used, substituting mineral oil for the vegetable oil. Below are given other formulas which have proved satisfactory.

V. Alper's formula:

White wax.....	av.oz. 5
Paraffin oil.....	av.oz. 20
Water	av.oz. 8
Borax	gr. 140
Oil of rose geranium.....	drops 15
Oil of rose.....	drops 20

Dissolve the wax in the oil at a temperature not exceeding 60° C. In another vessel dissolve the borax in the water raised to about the same temperature. Pour the aqueous solution in a continuous stream into the fatty liquid, stir the whole for two minutes, and incorporate the volatile oils.

VI. Formula of the Canadian Formulary:

White beeswax.....	av.oz. 4
Spermaceti	av.oz. 1
Paraffin oil.....	fl.oz. 16
Distilled water.....	fl.oz. 8
Borax	gr. 30
Oil of rose.....	m. 10

Dissolve the borax in the water, melt the wax and spermaceti with the paraffin oil at a gentle heat, pour the mixture into a warm mortar and add while yet hot, the borax solution, previously warmed, with constant trituration, and finally the oil of rose, and continue the trituration until cold.

In hot weather the quantity of wax may be increased to 5½ ounces and the spermaceti to 2 ounces.

VII. Oglesby's formula:

White wax.....	av.oz. 4
Paraffin oil.....	fl.oz. 20
Water	fl.oz. 8
Borax	dr. 1
Perfume	to suit

Melt the wax on a water bath, add the oil, and when melted but not hotter than is comfortable to the finger immersed in it, add the water containing the borax previously dissolved in it and brought to the same temperature, mix all at once, not stirring longer than is necessary to mix, then incorporate the perfume, and pour into containers while yet warm. When cool it will have a smooth, glossy surface.

VIII. Molyneux's formula:

Paraffin wax.....	av.oz. 4
White wax.....	av.oz. 4½
Paraffin oil.....	av.oz. 16½
Distilled water.....	av.oz. 6½
Sodium perborate.....	gr. 75

Melt the two waxes at a gentle heat, add the oil; also dissolve the perborate in the water, slightly warming the latter. Then add the aqueous liquid to the melted oil and waxes, in a fine stream, stirring constantly with a paddle until the mixture becomes smooth. Finally incorporate the perfume, and pour the cream while still semi-fluid into suitable containers. The product will have a smooth, glossy surface.

Cold Creams Containing Petrolatum.**IX. Formula of the British Pharmaceutical Codex:**

White petrolatum.....	av.oz. 4
White beeswax.....	av.oz. 4
Sweet almond oil.....	fl.oz. 16
Borax	dr. 2½
Rose water.....	fl.oz. 8
Oil of rose.....	m. 15

Melt the wax in the oil and dissolve the borax in the rose water by the aid of a gentle heat. Then add the aqueous liquid gradually to the wax and oil, and stir until the mixture stiffens. Pour this into a slightly warmed mortar containing the petrolatum, mix, add the oil of rose, and stir till cold.

The sweet almond oil may be replaced by cottonseed or benne oil.

X.

White wax.....	av.oz.	4½
Spermaceti	av.oz.	2½
White petrolatum.....	av.oz.	18
Rose water.....	fl.oz.	6
Borax	dr.	3
Oil of rose geranium.....	m.	15

Melt the wax, spermaceti and petrolatum together at a gentle heat, strain into a warmed wide-mouthed bottle, then add the rose water, previously warmed and containing the borax dissolved in it, also the oil of rose geranium, and agitate until well mixed and congealed.

XI.

White petrolatum.....	av.oz.	4
White wax.....	av.oz.	4
Paraffin oil, white.....	fl.oz.	12
Rose water.....	fl.oz.	8
Borax	dr.	5
Cumarin	gr.	1
Oil of rose.....	m.	30
Heliotropin	gr.	15
Oil of bergamot.....	drops	5
Oil of orris, concrete.....	gr.	1

Prepare like Nos. 1, 2, 3 or 4.

Cold Creams Containing Wool-Fat.

The hydrous wool-fat is to be used in these creams and this should be a first-class product as free as possible from odor and color. The cold cream obtained will, of course, not be white but cream-colored. The presence of wool-fat is said to make the cream more readily absorbed by the skin. It is also added to cold creams containing paraffin or petrolatum to counteract the non-absorbent properties of the latter.

XII.

White wax.....	av.oz.	2
Spermaceti	av.oz.	2
Sweet almond oil.....	fl.oz.	12
Wool-fat, hydrous.....	fl.oz.	5
Rose water.....	fl.oz.	10
Borax	dr.	1
Perfume	to suit	

Melt the wax and spermaceti, at a gentle heat, add the oil and wool-fat, continuing the heat until the latter is melted, then incorporating the rose water, previously warmed and in which

the borax has been dissolved; finally add any desired perfume.

The proportions of oil and wool-fat may be varied, and the almond oil may be replaced by cottonseed or benne oil.

XIII. Scoville's formula:

Paraffin wax.....	av.oz.	4
Paraffin oil.....	fl.oz.	12
Wool-fat, hydrous.....	av.oz.	8
Rose water.....	fl.oz.	8
Borax	dr.	1

Melt the wax at a gentle heat, add the oil and wool-fat and then incorporate the water in which the borax has previously been dissolved.

Cold Creams Without Water.

A true "cold cream" contains water but nevertheless formulas have been offered for such preparations without water to avoid the troublesome incorporation of the latter. The following is one of them:

XIV.

Paraffin wax.....	av.oz.	6
White wax.....	av.oz.	3
Paraffin oil, colorless.....	fl.oz.	24
Perfume	to suit	

Melt the two waxes on a water bath, remove from the source of heat, incorporate the oil, stirring briskly till congealed, then incorporate any desired perfume.

The following formula is also excellent:

XV.

White petrolatum.....	av.oz.	12½
Paraffin wax.....	av.oz.	1½
Tincture of benzoin.....	fl.dr.	4
Glycerin	fl.dr.	6
Zinc oxid.....	dr.	6
Perfume	to suit	

Melt the wax at a gentle heat, add the petrolatum, rub the zinc oxid to a smooth paste with the glycerin, and add this and the tincture to the melted mixture, and stir the whole until congealed. Finally add any desired perfume.

Cold Creams, Greaseless or Non-Greasy.

(Absorbent, Vanishing or Disappearing Cream—Stearin Jelly—Stearin Cold Cream.)

This is a novelty of recent introduction which is not strictly a "cold cream" but is a stearin soap containing considerable water and usually some glycerin. The stearic acid used for this purpose is what is commercially known as stearin, a hard, white waxy-like solid of an odor resembling tallow. A fairly good grade of stearin should be used; a chemically pure article is not necessary and is too expensive, a cheap grade of a rancid odor is, however, unfit for use. The stearin or stearic acid is heated on a water bath (higher temperatures decompose it) with distilled water and glycerin containing an alkaline substance in solution such as borax or potassium or sodium carbonate, when the stearin will combine with the alkali and water to form a real soft solution of stearin soap. The heating requires several hours, so that distilled water must be added from time to time to the mixture to make up for that lost by evaporation.

These creams should be kept in well-closed jars or dispensed in collapsible tubes to prevent evaporation of the water and drying out of the preparation. A certain amount of glycerin is necessary to prevent this drying-out property. A mucilage in place of a portion of the water such as mucilage of quince seed, agar-agar or tragacanth, or glycerite of starch in place of glycerin, will also obviate the drying-out property.

When rubbed on the skin, a cream of this kind appears to be entirely absorbed, hence the names "absorbent, vanishing, or disappearing cream" which are applied to it. This property would also make it serviceable as a "skin food," although as a real skin food, a lanolin cream is the ideal article.

These creams may be perfumed in any desired manner.

XVI. Cooban's formula:

Stearic acid (stearin).....av.oz.	2
Sodium carbonate, pure....av.oz.	1¼
Borax, powder.....av.oz.	¼

Glycerin	fl.oz. 4
Water	fl.oz. 32
Oil of ylang ylang.....	drops 80
Oil of rose.....	drops 20
Heliotropin	gr. 20
Alcohol	fl.oz. 4

Mix all the ingredients together and heat on a water bath until effervescence ceases. Remove the mixture from the source of heat and stir at intervals until it begins to stiffen, then incorporate the aromatic substances dissolved in the alcohol. Beat this up with a paddle or an egg beater. It may be made more fluffy and creamy by reheating and beating it up again.

Several modifications may be made in this formula. Two av. ounces of cocoa butter may be added during the heating but the product will be slightly greasy. The glycerin may be replaced by glycerite of starch. Also half of the water may be replaced by mucilage of tragacanth, quince seed or agar agar. The mucilage of tragacanth may be made according to the U. S. P. Mucilage of quince seed may be made of the proportion of 1 or 2 drams to the pint of water. Mucilage of agar agar may be made by heating 75 grains of agar agar with 4 fluidounces of water until dissolved, straining forcibly through cheese-cloth, and adding this while still warm to the stearin solution. Of course the perfume may also be varied.

XVII. Stanislaus' formula:

Stearic acid.....av.oz.	1½
Cocoa butter.....av.oz.	¼
Sodium carbonate, pure....av.oz.	1
Borax, powder.....av.oz.	¼
Glycerin	fl.oz. 1¼
Water	fl.oz. 20
Mucilage of tragacanth....	fl.oz. 5
Terpineol	m. 45
Oil of bitter almond....	drops 2
Oil of rose.....	drops 15
Alcohol	fl.oz. 1½

Dissolve the salts in the water, and add this solution with the glycerin and mucilage to cocoa butter and stearic acid contained in a vessel on a water bath. Heat the whole together until effervescence ceases, allow to cool, then add the perfumes dissolved in the alcohol, and

beat with an egg beater until it stiffens. Reapply heat and beat again until it becomes fluffy and creamy.

XVIII.

Stearic acid.....	av.oz.	4
Sodium carbonate.....	av.oz.	$\frac{1}{2}$
Glycerin	fl.dr.	4
Water	fl.oz.	16
Distilled ext. witch hazel....	fl.oz.	20

To the glycerin contained in a large evaporating dish add the sodium carbonate previously dissolved in the water. Add the stearic acid and heat the mixture on a water bath until no more vapors of carbon dioxid are evolved and a clear solution results. Keep this near the boiling point for at least an hour, stirring frequently, and making up for loss through evaporation by the addition of more water, being careful not to add too much. Now add the witch hazel extract, transfer the whole to a hot mortar, and beat with an egg beater until it becomes of the proper consistency. Allow to stand for 12 hours, stir well and transfer to jars that may be well closed, wide-mouthed bottles, or collapsible tubes.

Almond Cold Cream (Almond Cream).

This may be prepared like any of the preceding "cold creams" but substituting oil of bitter almond for oil of rose or other perfumes, or the following may be used:

XIX.

Spermaceti	av.oz.	3
White wax.....	av.oz.	3
Sweet almond oil.....	fl.oz.	16
Water	fl.oz.	8
Borax	dr.	1
Cumarin	gr.	1
Oil of bergamot.....	drops	20
Oil of bitter almond.....	drops	10
Oil of rose or rose geranium	drops	6
Tincture of ambergris....	drops	5

The cumarin and tincture of ambergris may be omitted, also more bitter almond oil may be used. Benzaldehyde may replace the latter oil. Cottonseed or benne oil may also replace the sweet almond oil.

Benzoinated Cold Cream.

Use any of the formulas of "cold cream" but adding tincture of benzoin to the perfumes or this tincture may entirely replace the other aromatic substances. Or use the following modified from the French Codex:

XX.

White wax.....	av.oz.	$2\frac{1}{2}$
Spermaceti	av.oz.	5
Sweet almond oil.....	fl.oz.	17
Rose water.....	fl.oz.	5
Tincture of benzoin.....	fl.oz.	$1\frac{1}{2}$

Mix in the usual manner for "cold creams."

Boroglycerin Cold Cream.

Any of the preceding formulas for "cold cream" may be used or those for "glycerin cold cream" but substituting boroglycerin or solution of boroglyceride for a portion of the water or for the glycerin, or use the following:

XXI.

Boric acid, powder.....	dr.	2
Glycerin	fl.oz.	3
Water	fl.oz.	4
Wool-fat, hydrous	av.oz.	3
Paraffin wax.....	av.oz.	4
Paraffin oil.....	fl.oz.	16
Oil of rose.....	drops	10
Oil of bergamot.....	drops	10

Warm together the first three ingredients until solution is effected. Melt together the lanolin and petrolatum, add the oil, incorporate the boroglycerin solution by rapid and constant stirring, then add the oils, and mix again.

Camphor Cold Cream. (Camphorated Cold Cream.)

This may be made by using any of the formulas for "cold cream" but dissolving a small amount of camphor gum in the oil or wax by the aid of a gentle heat before adding the other ingredients, or the following formulas may be used:

XXII. Mme. Qui Vive's formula:

Spermaceti	av.oz.	2
White wax.....	av.oz.	2
Sweet almond oil.....	fl.oz.	13
Camphor	av.oz.	1
Distilled water.....	fl.oz.	6
Borax	dr.	1

Oil or rose.....	drops	16
Oil of rose geranium.....	drops	4
Oil of ylang ylang.....	drops	4
Tincture of musk.....	drops	8
Tincture of civet.....	drops	8
Prepare like No. II.		

XXIII.

Camphor.....	av.oz.	2
Spermaceti.....	av.oz.	2
White wax.....	av.oz.	4
Sweet almond oil.....	fl.oz.	20
Rose water.....	fl.oz.	4
Oil of rose.....	drops	20

Prepare like the preceding. Cottonseed or benne oil may replace the sweet almond oil.

Cocoa Butter Cold Cream (Theobroma Cold Cream).

XXIV.

Cocoa butter.....	av.oz.	1¼
White wax.....	av.oz.	3
Paraffin wax.....	av.oz.	3
Paraffin oil, colorless.....	av.oz.	16
Water.....	fl.oz.	6
Borax.....	dr.	2
Perfume.....	to suit	

Melt the waxes and cocoa butter at a gentle heat, add the oil, then incorporate the water, previously warmed and containing in solution the borax, stir until congealed, and add the perfume.

Spermaceti may replace the paraffin wax, and cottonseed, sweet almond or benne oil the mineral oil but the product will not keep well. The cocoa butter may be increased if desired.

Cucumber Cold Cream (Cucumber Cream).

Any of the formulas for "cold cream" may be used, but substituting cucumber juice for a portion of the water. The following formulas may also be used. Cucumber cream is usually supposed to have a pale green tint. This color may be imparted by means of oil-soluble chlorophyll.

XXV.

Wool-fat, hydrous.....	av.oz.	8
Sweet almond oil.....	av.oz.	2½
Cucumber juice, freshly expressed.....	fl.oz.	16

Add any desired perfume, also tint with chlorophyll as described above.

XXVI.

Spermaceti.....	av.oz.	3
White wax.....	av.oz.	3
Castor oil.....	av.oz.	4
Cottonseed oil.....	av.oz.	12
Cucumber juice.....	fl.oz.	10
Borax.....	av.oz.	½
Benzoic acid.....	gr.	30

Melt the two waxes at a gentle heat, add the acid and oils, then the juice, previously slightly warmed and containing the borax in solution, and beat vigorously until well mixed and congealed.

The juice should be freshly expressed from green cucumbers and strained through cotton.

Glycerin Cold Cream.

Any of the formulas for "cold cream" may be used but substituting glycerin for all or a portion of the water, or the following will prove satisfactory:

XXVII.

Spermaceti.....	av.oz.	6
White wax.....	av.oz.	2
Sweet almond oil.....	fl.oz.	16
Borax.....	dr.	4
Glycerin.....	fl.oz.	6
Orange flower water.....	fl.oz.	2
Oil of neroli.....	drops	10
Oil of rose.....	drops	6

Melt the wax, spermaceti, and almond oil together at a gentle heat, dissolve the borax in the orange water and glycerin previously mixed; pour the solution, a little at a time, into the melted mixture, stirring the preparation without ceasing until all the solution has been fully incorporated, and a homogeneous product results; finally add the essential oils.

The almond oil may be replaced by cottonseed, benne or paraffin oil, and other perfumes may be used, such as rose water for the orange flower water.

Glycerin Balsam, which see, is similar to the above.

A variation of the above is to rub up the glycerin with powdered tragacanth to a smooth paste and incorporating this with any regulation "cold cream."

Lanolin Cold Cream (Lanolin Cream).

See Cold Creams with Wool-Fat.

Lemon Cold Cream (Lemon Cream).

This may be prepared by substituting the juice of lemons for a portion of the water in any of the preceding "cold creams." However, the product is not permanent unless the "cold cream" be made with paraffin oil or else contains considerable petrolatum.

Mentholated Cold Cream.

This may be prepared like the camphorated cold creams but replacing the camphor containing in the latter with one-fourth as much menthol.

Oxygenated or Peroxid Cold Cream.

Any "cold cream" may be converted into an oxygenated or peroxid cream by replacing a portion of the water with hydrogen peroxid, or by using 2 drams of sodium perborate or zinc peroxide to the pound of cream instead of borax. These creams are supposed to act as skin bleaches. See also the third formula under Face Bleaches.

Rose Cold Cream.

Rose cold cream may be prepared from any of the "cold creams" by tinting a rose color by means of solution of carmine, and also preferably imparting to it a strong odor by means of natural or synthetic oil of rose.

Salicylated or Salicylic Cold Cream.
XXVIII.

White wax.....	av.oz. 2
Spermaceti	av.oz. 2
Sweet almond or cottonseed oil	fl.oz. 12
Distilled water.....	fl.oz. 2
Glycerin	fl.oz. 2
Salicylic acid.....	gr. 90
Oil of rose.....	drops 5
Oil of neroli.....	drops 5
Oil of bergamot.....	drops 5
Oil of wintergreen.....	drops 3

Prepare in the usual manner for making cold cream, but add the salicylic acid last, previously triturating it to a smooth paste with the glycerin.

Strawberry Cold Cream (Strawberry Cream).**XXIX. Mme. Qui Vive's formula:**

White wax.....	av.oz. 2
Spermaceti	av.oz. 2
Sweet almond oil.....	fl.oz. 10

Strawberry juice.....	fl.oz. 3
Tincture of benzoin.....	drops 12

Prepare like the other "cold creams."

The strawberry juice should be freshly expressed from ripe berries.

It is probable that, owing to the acid nature of the juice, this cream does not keep well.

Sultana Cold Cream.**XXX.**

Spermaceti	av.oz. 1
White wax.....	av.oz. 1
Sweet almond oil.....	fl.oz. 16
Cocoa butter	av.oz. 16
Orange flower water.....	fl.oz. 4
Peru balsam.....	av.oz. 1

Melt the wax and spermaceti, add the cocoa butter, melt again, add the oil, and then incorporate the orange flower water and balsam.

Theatrical Cold Cream.

By this term is meant any moderately soft "cold cream" that can be sold at 50 cents per pound. Practically all of the foregoing formulas that are made with cottonseed, benne, lard or paraffin oil and do not contain much cocoa butter may be sold profitably at this price. If they are lacking in softness, more oil may be added.

Watch Hazel Cold Cream.**XXXI.**

White petrolatum.....	av.oz. 18
White wax.....	av.oz. 3
Spermaceti	av.oz. 3
Distilled ext. of witch hazel.....	fl.oz. 6

Melt the first three ingredients together, allow to cool to some extent, then add the witch hazel extract and stir. When nearly cold add any desired perfume and stir vigorously.

PERFUMES FOR COLD CREAM.

These are special combinations of odorous substances that may be used in place of those mentioned in the preceding formulas:

I.

Cumarin	gr. 1
Oil of rose.....	drops 30
Oil of neroli.....	drops 10
Oil of rose geranium.....	drops 7
Oil of ylang ylang.....	drops 3
Oil of orris.....	drop 1
Tincture of ambergris.....	drops 10

II.

Cumarin	gr.	1
Heliotropin	gr.	15
Oil of orris, concrete.....	gr.	1
Oil of bergamot.....	drops	5
Oil of rose.....	m.	30

III.

Terpineol	f.dr.	1
Oil of rose geranium.....	m.	15
Heliotropin	gr.	10

CREME DUCHESSE, Mme. Qui Vive's.

Benzoinated tallow.....	av.oz.	12
Sweet almond oil.....	av.oz.	4
Glycerin	f.oz.	1
Rose water.....	f.oz.	1
Oil of rose geranium.....	drops	80

Prepare this like the "cold creams."

The benzoinated tallow may be made like benzoinated lard.

CREME MARQUISE, Mme. Qui Vive's.

White wax.....	av.oz.	1
Spermaceti	av.oz.	10
Sweet almond oil.....	f.oz.	10
Rose water.....	f.oz.	6
Oil of rose.....	drops	4

Mix in the usual way for preparing "cold creams."

CREME DE LA VIOLETTES.

Mme. Qui Vive's formula:

White wax	av.oz.	2
Spermaceti	av.oz.	2
Sweet almond oil.....	f.oz.	10
Rose water.....	f.oz.	3
Borax	gr.	20
Violet extract.....	f.dr.	1

Prepare like the "cold creams."

EMOLLIENT CREAMS.

The following is quite different from the "cold creams" and may appeal to some as an excellent combination:

Precipitated sulfur.....	av.oz.	4
Zinc oxid.....	av.oz.	4
Wool-fat, hydrous.....	av.oz.	4
Sweet almond oil.....	av.oz.	2
Violet extract.....	f.dr.	2

Make into an ointment in the usual manner, taking particular precautions to rub the sulfur and zinc oxid thoroughly smooth. The mixture may be tinted red with alkanet, the latter being heated with the oil to extract the coloring matter. Other perfume may also be used instead of the violet extract.

This is recommended as a skin cream instead of "cold cream." It possesses some medicinal properties and is said to be useful for removing tan and freckles.

GLYCERIN BALSAM, Mme. Qui Vive's.

White wax.....	av.oz.	1
Spermaceti	av.oz.	2
Sweet almond oil.....	av.oz.	9
Glycerin	av.oz.	3
Oil of rose geranium.....	drops	16

Melt the waxes, then add the oil, remove from the fire, and heat in the glycerin, stirring briskly until congealed.

This is similar to "glycerin cold cream," which see.

CUCUMBER JUICE OR ESSENCE.

Take cucumbers in the green state, wash them thoroughly, then slice them with the skin on, into small fragments, place in an earthen or porcelain dish, pour upon them hot water to cover and let simmer for half an hour or more, being careful that the heat is not too high or the water too low so as to scorch. Then strain through a colander or muslin, and add to every pint of the juice four fluidounces of alcohol. Let stand over night and filter to remove precipitated albuminous matter.

The juice can also be preserved some length of time without the addition of alcohol, by the addition of thirty grains of salicylic acid dissolved in half an ounce of alcohol, or one dram of boric acid and sixty grains of borax dissolved in a pint of the juice, or the addition of one fluidram of solution of formaldehyde to one pint of the juice.

This juice or essence is suitable for the preparation of cucumber cream, ointment, salve, or milk, and is added in a similar manner as is rose water in preparing "cold cream."

CUCUMBER OINTMENT OR POMADE.

See also Cucumber Cold Cream.

I.

Melt together 11 av. ounces of lard and 7 av. ounces of veal suet, the suet

first having been rendered, in a water bath. To the fat, strained into a jar of the capacity of one gallon, when it begins to thicken add one-third of the juice obtained by grating and expressing 3 av. pounds of green cucumbers and beat the mixture with a spatula until all of the odor of the cucumber has been absorbed by the fat, which will require several hours. The watery fluid should then be rejected and the remaining juice added in two consecutive portions, incorporated in the previous manner and the watery liquid again rejected. The fat should then be heated in a closed vessel on a water bath for one hour, the albuminous coagulum should be skimmed off, the watery matter should be removed on cooling, the ointment should again be melted and then strained. Before use, this fat should be triturated with a little rose water until it is of a creamy character.

This formula was devised many years ago by Prof. Procter. On account of its complicated nature, the same authority devised a somewhat simpler method of procedure, as follows:

Cucumbersav.lb. 10
Sweet almond oil.....av.lb. 1

Grate the cucumbers without paring, on a tinned grater, express the juice, and strain it through a close-woven cloth. Put half the juice into a gallon bottle, add the oil, cork the bottle, and agitate the mixture at short intervals during several hours, let the oil rise to the surface, decant the exhausted juice and replace it by the remainder of the juice, again agitate freely and repeatedly, allowing 24 hours to elapse before setting it aside to separate. Then decant the exhausted juice and throw it away. Finally separate the oily layer as much as possible from water, and filter it through a pleated filter which has previously been dipped in sweet almond oil and allowed to drain. A clear, bright, oily filtrate is obtained except towards the last when some water begins to come through. All moisture

must be separated to prevent change in the oil which may be known as "cucumber oil." It has a decided odor of cucumber, and is used for preparing cucumber ointment according to formulas II and III.

II.

White wax.....av.oz. 1
Cucumber oil.....av.oz. 4
Mutton suet.....av.oz. 8

Melt the wax and suet at a gentle heat, add the oil, and stir until it thickens.

This is said to be nearly white, to be perfectly smooth and homogeneous, and to have an agreeable odor of cucumbers.

III.

White wax.....av.oz. 1
Spermacetiav.oz. 4
Cucumber oil.....av.oz. 8
Sweet almond oil.....av.oz. 12

Prepare like No. II. It is softer than the preceding.

MASSAGE CREAMS, Casein or Rolling.

Massage creams are of two varieties, those that "roll up" on the skin and the greasy kind. The latter will be treated in the next article. The former is made with casein as a basis. This is mixed with glycerin, oil, or wool-fat to give it softness, with an antiseptic agent to preserve it, and is usually colored pink. The glycerin also prevents drying out. The casein for this purpose may be purchased in the dry condition in the market, or it may be precipitated from milk by means of an acid, alum or rennet. Preferably skimmed milk should be used or the fatty matter should first be separated. The presence of any butter fat in the product will induce speedy rancidity. The finished cream should be dispensed in well-closed jars.

This cream is used mostly to smooth out wrinkles and to clear the skin by removing blackheads.

I. Cooban's formula:

Skimmed milkgall. 1
Hydrochloric acid.....fl.oz. 1
Boric acid, powder.....av.oz. 1

Diluted alcohol.....	fl.oz. 1
Oil of bergamot.....	drops 20
Oil of rose geranium.....	drops 30
Sweet almond oil.....	fl.dr. 4
Solution of carmine, water, each	sufficient

To the milk add one gallon of water hot enough to raise the temperature of the mixture to about 80° F. Mix the hydrochloric acid with one pint of water and add this to the diluted milk slowly and with constant stirring. Allow the liquid to stand for an hour, collect the precipitate on cheese-cloth, allow it to drain, return it to the vessel and add 2 gallons of water. Agitate the liquid thoroughly, breaking up the masses of coagulum, and again drain as before. Repeat this washing and draining until the casein is free from acid and whey. Finally rub up the casein in a mortar with boric acid until well mixed, again transfer to a cheese-cloth bag and allow to hang suspended for 36 to 48 hours, squeezing the bag occasionally, until the casein is quite dry. Transfer the dried and granular casein to a mortar, triturate it till smooth, adding the diluted alcohol to facilitate the process. When well rubbed out, incorporate the sweet almond and aromatic oils and tint sufficiently with carmine solution. Then add water enough to form a soft paste and triturate together until well mixed. It is said a perfectly smooth product will not be obtained until it is ground in a paint mill. It must be bottled at once to prevent drying out in suitable jars, or it may be put into collapsible tubes.

II. Dr. M. E. Doyle's formula:

Milk, preferably skimmed...	gall. 1
Magnesium sulfate.....	av.oz. 13
Alum	dr. 9½
Water	sufficient

Heat the milk to about 120° F., add the magnesium sulfate made into a saturated solution in water, set the mixture aside for about an hour, again heat to 130° F., add the alum previously dissolved in hot water, and continue the heat a little longer until the casein is entirely separated, but not allowing

the temperature to rise above 145° F. Wash this, like the precipitate in the preceding formula, in several changes of water, and then hang up in a cloth to drain until dry. Then take the following:

Casein, precipitated as

above	av.oz. 20
Boric acid, powder.....	av.oz. 4
Cocoa butter.....	av.oz. 2
Solution of carmine, spirit of bitter almond, each...	sufficient

Rub up the casein in a mortar, add the cocoa butter, previously melted, continuing trituration until smooth. Also add carmine solution to color pink and enough of the spirit to impart suitable odor.

III. Harley's formula:

Skimmed milk.....	gall. 1
Alum, powder.....	av.oz. 3
Borax, powder.....	av.oz. 3
Boric acid, powder.....	av.oz. 2
Carbolic acid, 90%.....	drops 25
Oils of rose geranium and bitter almond, each.....	sufficient
Water, solution of carmine, each	sufficient

Heat the milk to 130° F.; dissolve the alum in 4 fluidounces of water and heat to the same temperature; also dissolve the borax and boric acid in 10 fluidounces of water and heat this to the same temperature. Mix the milk and the second solution, then add the alum solution (all being at about 130° F.). After the milk has curdled, strain it, and if not clear, add more alum solution to it, enough to clear it. Collect the casein, incorporate it with the carbolic acid, enough of the oils to impart a suitable odor, and a sufficient amount of carmine to tint it properly.

IV. Morgan's formula:

Skimmed milk.....	gall. 1
Tartaric acid.....	av.oz. 4
Zinc oxid.....	av.oz. 1
Borax, powder.....	av.oz. ½
Glycerin	fl.oz. 2
Water	fl.oz. 32
Solution of carmine, perfume, each	sufficient

Dissolve the acid in the water and add to the milk, collect the precipitate

and drain it. Rub the zinc oxid to a smooth paste with the glycerin, incorporate the casein, borax, enough solution of carmine to tint properly, and a sufficient amount of any desired perfume.

V.

Casein, dried.....	av.oz. 8
Borax, powder.....	av.oz. 1
Wool-fat, hydrous.....	av.oz. 6
Oil of bergamot.....	dr. 2
Oil of bitter almond.....	m. 30
Glycerin	fl.oz. 4
Water	fl.oz. 16
Solution of carmine.....	sufficient

Mix the casein, borax, glycerin and water and heat on a water bath until a uniformly smooth and jelly-like mass is obtained, then transfer to a mortar, add the wool-fat, triturate till well mixed and smooth, incorporate the oils, and finally tint sufficiently with the carmine solution.

MASSAGE CREAMS, Fatty.

Different fatty or oily substances are used for purposes of massage, such as olive, sweet almond, or cocoanut oil, and professional masseurs have various favorite mixtures of their own. All the "cold creams," except the non-greasy kind, may be used for this purpose, in fact most of the massage creams and "skin foods" are in reality "cold creams." These fatty massage creams are extolled as skin foods; some of the fatty matter is supposed to be absorbed, making the tissues more plump, and the accompanying massage helps to smooth out wrinkles, soften the skin, and fill out the cheeks, neck, and bust. The previously mentioned casein massage creams are really not skin foods but act only as cleansers.

I.

White wax.....	av.oz. 4
Wool-fat, hydrous.....	av.oz. 2
Paraffin oil.....	av.oz. 16
Rose water.....	fl.oz. 6
Borax, powder.....	dr. 2
Perfume	to suit

Melt the wax, add the wool-fat and oil, dissolve the borax in the rose water by the aid of a gentle heat, and stir

the whole together, beating it until congealed. Finally add perfume of any desired kind.

If there is objection to the mineral oil, it may be replaced by sweet almond, cottonseed or benne oil.

II.

Wool-fat, hydrous.....	av.oz. 4
Benzoinated lard.....	av.oz. 4
Sweet almond oil.....	av.oz. 4
Glycerin	av.oz. 2
Rose of orange flower water.....	fl.oz. 2
Perfume	to suit

MASSAGE EMOLLIENT.

The following liquid has been suggested to use instead of massage cream:

Sweet almond oil.....	fl.oz. 12
Tolu balsam.....	dr. 2
Benzoin	dr. 2
Oil of bitter almond.....	fl.dr. 1
Oil of lemon.....	drops 10
Oil of bergamot.....	drops 10

Warm the sweet almond oil with the tolu and benzoin and keep warm for several hours, then allow to cool, strain, and add the other oils.

SKIN FOOD.

Preparations sailing under this name are usually "cold creams" or fatty massage creams or other bland ointments suitably perfumed and sometimes tinted. Fat forms the basis and gives them their hygienic effect as it imparts fullness and softness to the skin. When applied, these preparations are to be rubbed into the skin abundantly, and the friction assists the absorbed fat in developing the muscles. Any of the cold creams may be dispensed under the name of "skin food" or any of the subjoined may be used. The so-called "greaseless cold cream," which see, is recommended as a skin food because it dries on the skin but apparently it "rubs in."

White petrolatum.....	av.oz. 16
Paraffin wax.....	av.oz. 2
Wool-fat, hydrous.....	av.oz. 4
Water	fl.oz. 1
Oil of rose geranium.....	drops 40

Melt the paraffin, add the petrolatum and wool-fat, pour into a warm mortar with constant stirring, incorporate the water and perfume.

If the preparation is to be tinted red use alkanet root, and an amber colored petrolatum may be employed instead of the white.

Orange Flower Skin Food (Mme. Qui Vive's)—(Cuticle Cream).

White wax.....	av.oz.	2
Spermaceti	av.oz.	2
Cocoonut oil.....	av.oz.	4
Wool-fat, hydrous.....	av.oz.	4
Sweet almond oil.....	fl.oz.	8
Orange flower water.....	fl.oz.	4
Tincture of benzoin.....	drops	12

Melt the wax and spermaceti at a gentle heat, add the oils and wool-fat, continue the heat until all are melted, then add the water and tincture, and stir vigorously until congealed and of a creamy consistence.

BUST DEVELOPERS.

These are of the same type as the "skin foods," in fact the latter are always mentioned as bust developers. As in the case of other portions of the body, the bust is developed or enlarged when vigorously and frequently massaged with the assistance of a suitable fatty body. The directions given with an advertised bust developer were as follows:

Sponge each breast for 10 minutes with cold water; follow this sponging with brisk friction with a coarse towel for 5 minutes. After the breast is thoroughly dried and the skin is in a glow, rub the unction well into the skin. All motions should be made firmly but without sufficient force to bruise the tender tissues or abrade the skin. The motions are best alternated from circles beginning at the base of the gland and decreasing in size until the nipple is reached, to straight stroking lines converging from the base of the breast to the nipple. Repeat this treatment twice daily.

The following is what is called Bennett's Breast Developer:

I.

Castor oil.....	fl.oz.	4
Glycerin	fl.oz.	4
Alcohol	fl.oz.	8

Peru balsam.....	dr.	1
Oil of bergamot.....	fl.dr.	1
Oil of lavender flowers.....	m.	30
Oil of rosemary.....	m.	30

This is to be rubbed thoroughly into the breasts at night.

The following remedy is for internal use and has been highly recommended under the name Vaucaire Remedy:

II.

Fluid extract of goat's rue

(Galega vera).....	fl.dr.	2½
Tincture of fennel.....	fl.dr.	2½
Calcium lactophosphate.....	dr.	2½
Simple syrup, to make.....	fl.oz.	16

The directions are "A soup-spoonful before meals and upon going to bed."

The efficacy of the preparation is mainly in the presumed galactagogue properties of the goat's rue.

FACE OR TOILET CREAMS (Non-Greasy Skin Creams).

These preparations are mucilaginous in character, consisting of tragacanth, quince seed, linseed, Irish moss or agar-agar mucilage combined with water, alcohol, glycerin, borax, or boric acid, and sometimes other ingredients. The formulas do not specify coloring matter, but the preparations may be tinted any desired color; red, for example, by means of solution of carmine; violet by means of violet aniline, etc. These creams may be dispensed in moderately wide-mouthed bottles or in collapsible tubes.

Such preparations may be dispensed under the names "face cream," "toilet cream," "cooling cream," "skin cream," "cosmetic cream," "glycerin cream," "chappine cream," "fragrant cream," or similar titles. If containing menthol, the title "menthol cream" may be used; if containing camphor, "camphor cream"; if containing calendula, "calendula cream," etc. Other titles which are used are "cream of roses," "cream of lilacs," "calendula and glycerin lotion," etc.

See also "Creams Containing Almond."

These preparations are useful in summertime to remove as well as to prevent

tan or sunburn, and in winter to cure and prevent chapped hands, cracked lips and other roughnesses of the skin. Ladies will also find them useful to apply to the face before using a complexion powder, and gentlemen will find it of advantage to use them on the face after shaving.

Toilet Creams Containing Tragacanth.

Either the whole gum or powdered tragacanth may be used for making a toilet cream; the powder is very much more convenient although current formulas generally mention the whole gum. The advantage in using the powder is that the preparation may be finished at once while the whole gum requires a lengthy preliminary maceration to soften it. The softening may be accelerated by using the water warm or hot and by frequent beating with a paddle or trituration in a mortar with a pestle. After the gum has softened thoroughly the other ingredients may be added and the whole squeezed through cheese-cloth or muslin, preferably the former, as the texture of the muslin is too dense for this purpose. Or the mixture may be very conveniently run through a hand flour sifter.

The appearance of a cream made with powdered tragacanth varies according as a commercial or a pure powder is used. Either will make a satisfactory preparation but the pure powder will make a more translucent and cleaner looking product. A very satisfactory way of making a cream with powder of tragacanth is to agitate the powder in a bottle with the alcohol or alcoholic liquid, if such is present in the mixture, until the mixture is free from lumps, then add the water or aqueous liquid, all at once, and shake again until well mixed, then incorporate the other ingredients. If the mixing has been properly done, no straining is required, but if any lumps are present, these may be separated by straining through cheese-cloth or, more quickly and satisfactorily, through a

small wire tea or coffee strainer. The powder may also be triturated in a mortar with glycerin to a smooth paste, and the other ingredients incorporated by continued trituration.

Any desired perfume may be added, such as mixtures of various aromatic volatile oils or synthetic perfumes. The mixtures mentioned under "Perfumes for Cold Cream" may be used.

These creams may be tinted if desired.

I.

Tragacanth, whole	dr. 2
Boric acid	av.oz. $\frac{1}{2}$
Glycerin	fl.oz. 4
Alcohol	fl.oz. 4
Water	fl.oz. 24
Perfume, to suit.	

Dissolve the acid in the water by the aid of heat, add the gum, macerate until the latter is softened, stirring vigorously from time to time, then add the other ingredients, and strain the whole forcibly through cheese-cloth. Finally add any desired perfume.

II.

Tragacanth, powder	dr. 4
Alcohol	fl.oz. 4
Glycerin	fl.oz. 8
Water	fl.oz. 20
Perfume, to suit.	

Shake the powder with the alcohol in a bottle until the mixture is free from lumps, then add the water, all at once, shake until thoroughly well mixed, and then incorporate the glycerin and perfume. Finally strain through cheese-cloth or a small strainer.

III.

Tragacanth, powder	dr. 2
Borax	dr. 2
Glycerin	fl.oz. 4
Water	fl.oz. 28
Perfume, to suit.	

Triturate the gum with the glycerin to a smooth paste, dissolve the borax in the water, filter the solution, and incorporate this with the previously prepared paste. Finally add the perfume.

IV.

Tragacanth, whole	dr. 2
Starch	dr. 2
Boric acid	gr. 30

Carbolic acid	m.	25
Oil of rose.....	drops	10
Oil of lavender flowers.....	drops	20
White rose extract.....	f.dr.	4
Tincture of benzoin.....	f.dr.	1
Glycerin	f.oz.	3
Alcohol	f.oz.	6
Water, to make.....	f.oz.	32

Dissolve the boric acid in 16 fluid-ounces of water, add the tragacanth, macerate until thoroughly softened, stirring vigorously from time to time, and strain forcibly through cheese-cloth or run through a small flour sifter. Also heat the glycerin and starch together carefully, with constant stirring, until a smooth jelly is obtained. To this gradually add the tragacanth, incorporating thoroughly together. Now add a mixture of the carbolic acid, oils, extract and alcohol, mix well, and finally add the water. If necessary, strain again through the cheese-cloth or flour sifter.

Toilet Creams Containing Quince Seed.

Quince seed in the uncrushed form yields considerable mucilage to water and hence it makes a satisfactory toilet cream. To make such a cream with quince seed, the latter is simply macerated in water, the liquid being stirred vigorously from time to time. A cleaner looking product is obtained if the quince seed is first washed on a sieve with running water to remove adherent dirt and dust. It is best not to add boric acid or borax to the liquid during maceration of the seed as these substances appear to hinder the solution of the gummy matter. ♦

If a milky white preparation is desired, it may be obtained by adding a small amount of tincture of benzoin, about 1 ounce to the gallon.

Any kind of desired perfume, such as an "extract," aromatic oil, or synthetic perfume, may be added to the cream.

V.

Quince seed	av.oz.	¾
Glycerin	f.oz.	4
Borax, powder	dr.	2½
Water	f.oz.	27
Cologne water	f.oz.	2

Heat the water to boiling, add the seed, macerate for about 4 hours, stirring frequently, then strain the liquid, add the glycerin and borax, dissolve the latter by the aid of a gentle heat, allow to cool and finally incorporate the cologne water.

Other perfume or aromatic oils may be used. The water may also be used cold but a longer maceration of the seeds will be required.

VI.

Quince seed.....	dr.	4
Borax	dr.	1½
Boric acid	dr.	1½
Glycerin	f.oz.	4
Alcohol	f.oz.	4
Water	f.oz.	24
Perfume, to suit.		

Heat 20 fluidounces of water to boiling, add the seed, macerate for several hours, stirring frequently, then strain, dissolve the borax and acid in the remainder of the water by the aid of heat, add this solution and the glycerin, alcohol and perfume to the mucilage, and mix well by agitation.

The water may be used cold but a longer maceration will be required.

VII.

Quince seed	av.oz.	¾
Borax	dr.	2
Carbolic acid	m.	30
Tincture of benzoin.....	f.oz.	1
Glycerin	f.oz.	3
Water, to make.....	f.oz.	32
Perfume, to suit.		

Pour 16 fluidounces of boiling water on the seed, add the borax and acid, let macerate for several hours, agitating occasionally. Strain the liquid, mix the residue with 12 fluidounces of boiling water, macerate as before, and again strain. Mix the two colatures, add the glycerin, incorporate the tincture by agitation, perfume with some extract or aromatic oils if desired, and finally add water enough to make 32 fluidounces.

The addition of tincture of benzoin makes a milky white product.

Toilet Creams Containing Linseed.

Linseed may be used like quince seed for making a face cream and produces

an equally acceptable product. The linseed should be washed on a sieve with running water to remove adherent dust and dirt. The product may be perfumed and colored as desired.

IX.

Linseed, whole	av.oz.	3
Boric acid	av.oz.	$\frac{1}{2}$
Oil of rose	drops	8
Glycerin	fl.oz.	4
Alcohol	fl.oz.	8
Water, to make	fl.oz.	32

Wash the linseed on a sieve to remove adherent dust and dirt, macerate in 20 fluidounces of water for 2 or 3 days, agitating frequently, strain the mucilage through cheese-cloth; in the glycerin dissolve the acid by the aid of a gentle heat, then add this solution, and the oil and alcohol to the mucilage, and finally pass enough water through the strainer to make the total liquid measure 32 fluidounces.

Other perfume may be used instead of oil of rose.

X.

Linseed, whole	av.oz.	4
Boric acid	gr.	30
Carbolic acid	dr.	2
Cologne water	dr.	3
Glycerin	fl.oz.	3
Alcohol	fl.oz.	4
Water, to make	fl.oz.	32

Prepare like the preceding.

Toilet Creams Containing Irish Moss.

In making a toilet cream with Irish moss as a basis, the latter must be boiled with water to extract the mucilaginous substance. Subsequent treatment is the same as in making the other creams, addition of alcohol, glycerin, perfume, etc.

XI.

Irish moss	av.oz.	1
Glycerin	fl.oz.	8
Alcohol	fl.oz.	8
Boric acid	av.oz.	1
Water, to make	fl.oz.	64
Perfume, to suit.		

Heat the moss with a half gallon of boiling water for 5 or 10 minutes, then strain; in the liquid dissolve the boric

acid, add the glycerin, alcohol, and any desired perfume, and finally pass enough warm water through the strainer to make 64 fluidounces.

XII.

Mucilage of Irish moss,

N. F.	fl.oz.	8
Borax	dr.	1
Glycerin	fl.oz.	12
Cologne water	fl.oz.	4
Water	fl.oz.	8

Dissolve the borax in the water and add the other ingredients. Other perfume may be added instead of the cologne water.

Almond Toilet Cream (Almond Cream).

On account of the variety of creams containing almond in some form, a distinction must be made between the fatty and non-fatty creams and those that are actually made with almonds or sweet almond oil and those that merely contain oil of bitter almond or benzaldehyde as the odorous agent. The almond cold creams have already been mentioned (see under Cold Cream), the creams containing almond will be mentioned later, and under the present heading are given formulas for two non-fatty creams of the bitter almond odor. Any of the preceding non-greasy skin creams may be made into almond creams by replacing the perfume with oil of bitter almond or benzaldehyde.

XIII.

Tragacanth, powder	dr.	2
Borax, powder	dr.	2
Ammonium chlorid	av.oz.	$\frac{1}{2}$
Glycerin	fl.oz.	5
Water	fl.oz.	27
Oil of bitter almond	drops	15

Triturate the tragacanth with the glycerin to a smooth paste; dissolve the borax and ammonium chlorid in a portion of the water; add this solution, the oil, and the remainder of the water to the mucilage, and mix the whole thoroughly.

The borax and ammonium chlorid may be omitted.

XIV.

Castile soap, powder.....	dr. 2
Boric acid, powder.....	dr. 1
Tragacanth, powder	gr. 90
Glycerin	fl.oz. 6
Water	fl.oz. 26
Oil of bitter almond.....	drops 20

Triturate the first three ingredients and the oil with the glycerin to a smooth paste, and then incorporate the water.

The soap may be omitted if desired, but then the amount of gum will have to be increased to at least 2 drams.

Calendula Toilet Cream (Calendula Cream).

XV.

Tragacanth, powder	dr. 2
Borax	dr. 2
Ammonium chlorid	dr. 4
Tincture of calendula.....	fl.oz. 2
Glycerin	fl.oz. 4
Water	fl.oz. 26

Triturate the gum with the glycerin to a smooth paste; dissolve the borax and ammonium chlorid in a portion of the water, filter this solution, mix the two liquids, add the remainder of the water, and incorporate the tincture (and some "extract" to perfume) with this mixture by agitation.

Any other of the toilet creams may be made into a calendula cream by adding tincture of calendula to it.

Camphor Toilet Cream (Camphor Cream).

XVI.

Quince seed	av.oz. $\frac{1}{2}$
Water, hot	fl.oz. 28
Borax, powder	dr. 2
Glycerin	fl.oz. 4
Spirit of camphor.....	fl.oz. 2
Oil of bitter almond.....	drops 20

Macerate the quince seed for several hours with the water, stir frequently, strain, add the glycerin and in the mixture dissolve the borax. Dissolve the oil in the spirit of camphor and gradually add it to the mucilage and mix thoroughly.

Cucumber Toilet Cream.

Prepare like any of the preceding creams, replacing a portion of the water with cucumber juice and color a pale green with chlorophyll or green aniline.

See formula for Cucumber Juice or Essence.

Mentholated Toilet Cream.

Any of the previously mentioned toilet creams may be converted into a menthol cream by replacing the perfume with a solution of menthol in alcohol. Too large a quantity of menthol must not be used as it may prove irritant and an excess will be precipitated from the aqueous cream. The following formula may be used to make a menthol cream:

XVII.

Tragacanth, powder	dr. 2
Glycerin	fl.oz. 1
Menthol	gr. 40
Alcohol	fl.oz. 2
Water, to make.....	fl.oz. 32
Solution of carmine.....	sufficient

Triturate the tragacanth with the glycerin, dissolve the menthol in the alcohol, mix the gummy and alcoholic liquids by trituration, color a light pink by the addition of the carmine solution, and then gradually and thoroughly incorporate the water.

The coloring matter may be omitted.

Violet Toilet Cream.

XVIII.

Tragacanth, whole	dr. 4
Benzoic acid	dr. 1
Borax, powder	dr. 1
Water	fl.oz. 8
Orange flower water.....	fl.oz. 8
Glycerin	fl.oz. 16
Oil of orris.....	m. 30
Jasmine extract	fl.dr. 4

Macerate the gum in the water for 1 or 2 days until thoroughly softened; dissolve the borax and acid in the mixed glycerin and orange flower water, add this solution and the oil and extract to the mucilage, let stand several days longer, shaking frequently, then strain with pressure through cheese-cloth. More water may be added if necessary.

Witch Hazel Toilet Cream.

Any of the previously mentioned toilet creams may be made into a witch hazel cream by omitting the perfume and substituting distilled extract of witch hazel for the alcohol and water. Or the following may be used:

XIX.

Quince seed	av.oz.	1/2
Borax	gr.	20
Glycerin	fl.oz.	2
Alcohol	fl.oz.	2
Water	fl.oz.	1
Distilled ext. of witch hazel	fl.oz.	28

Macerate the seed, glycerin and extract together for about 12 hours, agitating frequently, then strain, and add a solution of the borax in the water, and the alcohol.

Creams Containing Almond (Amandine).

Some toilet creams differ from the preceding kind in containing almond in some form, either as an emulsion of sweet or bitter almond, or sweet almond oil in emulsion or saponaceous form, or the almonds and oil may be combined. The creams containing merely oil of bitter almonds for the odor are mentioned under a preceding heading entitled Almond Toilet Cream, which see.

These creams receive such names as "almond cream," "milk of almonds," and "amandine." If a "honey and almond cream" is desired, a portion of the water or glycerin may be replaced with honey. If the preparation is tinted a rose color or is flavored strongly with rose, it may be called "cream of roses." Any of the preparations mentioned below may be so tinted or perfumed. Or any other perfume may be added.

These preparations are used for cleansing, softening and whitening the skin, almonds having the reputation of being particularly effective for this purpose. In summer time they may be recommended for removing tan or sunburn, and in winter time for healing "chaps" and roughness of the skin.

See also Gowland's Cosmetic Lotion for a similar preparation containing mercuric chlorid.

XX.

Sweet almonds	av.oz.	2
Sweet almond oil	fl.dr.	4
Quince seed	av.oz.	1
Borax, powder	gr.	30

Alcohol	fl.oz.	4
Water, to make	fl.oz.	32
Oil of rose or ylang ylang	drops	10

Blanch the almonds and make them into an emulsion with the water, gradually added. Add the quince seed to this liquid, let stand for 12 to 24 hours, stirring frequently, and then strain. Dissolve the borax in 1 ounce of water, add the oil, shake, and mix with the previously prepared liquid, agitating thoroughly. Now add the alcohol containing the oil, also pass enough water through the strainer to make 32 fluidounces, and mix the whole intimately to secure a uniform product.

The oil of rose or ylang ylang used may be synthetic oil, or some other kind of perfume may be employed.

XXI.

Sweet almonds	av.oz.	5
Castile soap, white	dr.	2
White wax	dr.	2
Spermaceti	dr.	2
Oil of bitter almond	drops	10
Oil of bergamot	drops	20
Alcohol	fl.oz.	6
Water	sufficient	

Blanch the almonds and make an emulsion of them with water so as to obtain 16 fluidounces of product, straining through cloth. Dissolve the soap with the aid of heat in 8 fluidounces of water, add the wax and spermaceti, continue the heat until the latter is melted, transfer to a mortar, and incorporate the almond emulsion slowly with constant stirring until all has been added and a smooth cream has been formed. Finally add the two volatile oils dissolved in the alcohol.

Honey and Almond Cream.

XXII.

Honey	av.oz.	2
White castile soap, powder	av.oz.	1
Sweet almond oil	fl.oz.	26
Oil of bitter almond	fl.dr.	1
Oil of bergamot	fl.dr.	1
Oil of clove	drops	15
Peru balsam	dr.	1
Solution of potassa	sufficient	

Mix the honey and soap in a mortar and add enough solution of potassa to

make a nice cream, or about 1 fluidram. Then add the sweet almond oil and other ingredients.

TOILET MILKS.

Some toilet washes are known by the appellation of "milk." These consist of an oily substance combined with borax, powdered soap, and a large quantity of water, and are therefore in a sense an imperfect and thin soap, the whole being suitably flavored. The oily substance may consist of lanolin, cocoa butter, cocoanut oil or a combination of these. According to this fatty constituent, the preparation receives the name of "cocoa milk," "cacao milk" or "lanolin milk." Another "milk" which is also used is "cucumber milk" or "milk of cucumbers," which also contains borax, some oil or soap, and cucumber juice.

These preparations are used as a substitute for "cold cream" to be applied to the skin at night and may be applied to the face instead of toilet cream before using powder, to enable the latter to adhere more readily.

Cocqa or Cacao Milk.

I.

Borax	dr.	2½
White castile soap.....	dr.	1½
Cocoa butter	av.oz.	1½
Cocoanut oil	dr.	2
Rose water	fl.oz.	30

Triturate the borax and soap, both in powder form, with the cocoa butter and oil and 2½ fluidounces of rose water, in a warmed mortar, until thoroughly mixed, then dilute gradually with the remainder of the rose water. Any desired perfume may be added.

The cocoanut oil may be replaced with sweet almond oil.

II.

Borax, powder	dr.	2½
White castile soap, powder.....	av.oz.	½
Cocoanut oil	av.oz.	½
Cocoa butter, grated.....	av.oz.	1½
Water	fl.oz.	2
Rose water	fl.oz.	28
Oil of bergamot.....	drops	20
Oil of neroli.....	drops	5
Oil of orris, liquid.....	drop	1

Triturate the first five ingredients to-

gether in a warm mortar until well mixed, then gradually incorporate the rose water previously warmed to 40° C., and add the essential oils.

Cucumber Milk (Milk of Cucumbers).

For the process for making cucumber juice mentioned in the formulas below, see under heading entitled Cucumber Juice or Essence.

III.

Cucumber juice	fl.oz.	8
Sweet almond oil.....	fl.oz.	2
Spirit of soap, N. F.....	fl.oz.	2
Tincture of benzoïn.....	fl.dr.	1
Oil of lavender flowers.....	drops	15
Oil of bergamot.....	drops	10
Oil of bitter almond.....	drop	1

Mix the sweet almond and essential oils, shake with the spirit and tincture, and then incorporate the juice, gradually added, with constant agitation.

Lanolin Milk.

IV.

Borax	dr.	2½
Soap, white castile.....	dr.	5
Cocoanut oil	av.oz.	1
Wool fat, hydrous.....	av.oz.	2½
Water	fl.oz.	2½
Rose water	fl.oz.	26
Oil of bergamot.....	drops	10
Oil of neroli.....	drops	10
Oil of rose.....	drops	5
Oil of wintergreen.....	drop	1
Oil of orris, liquid.....	drop	1

Triturate the borax and soap, both in powder form, with the cocoanut oil, fat and water until well mixed, then incorporate the rose water, previously warmed to about 40° C., gradually added, continuing the trituration, and finally add the volatile oils.

V.

White castile soap, powder....	gr.	22
Lanolin	av.oz.	1
Tincture of benzoïn.....	fl.dr.	1½
Distilled water, to make....	fl.oz.	16

Dissolve the soap in 2 fluidounces of warm water, also rub the lanolin with 2 fluidounces of water until well mixed, then incorporate the two with each other, adding the remainder of the water, finally incorporating the tincture. The latter may be replaced by 90 gr. of powdered borax.

MILK OF ROSES.

Some toilet preparations are known by this title. As examples may be mentioned such of the "Creams Containing Almond" (which see), which are perfumed with rose. The following formulas are also used to make preparations passing under this name:

I. English formulas.

A.
 Sweet almonds, blanched..av.oz. 1½
 Sweet almond oil.....fl.dr. 1
 Soft soap (as white as possible)dr. 1
 Rose waterfl.oz. 12
 Oil of rose.....drops 5
 Alcoholfl.oz. 3
 Blanch the almonds in the usual manner, make them into an emulsion with the rose water, and strain. Triturate the almond oil and soap together and gradually add the emulsion with constant stirring. Finally add the oil of rose dissolved in the alcohol.

B.

Sweet almond oil.....fl.oz. 1
 Soft soap (as white as possible)av.oz. 1
 Potassium carbonategr. 30
 Water, boilingfl.oz. 4
 Alcoholfl.oz. 2
 Oil of rose.....drop 1
 Rose water, to make.....fl.oz. 16
 Mix the first four ingredients intimately, allow to cool, add the alcohol containing the oil of rose, and finally add the rose water.

II. French formulas.

A.

Tincture of benzoin.....fl.dr. 4
 Tincture of storax.....fl.dr. 2
 Spirit of rose.....fl.dr. 2
 Alcoholfl.oz. 2½
 Rose waterfl.oz. 16½
 Mix the first four ingredients, and add the rose water gradually with frequent and vigorous agitation.

B.

Tincture of benzoin.....fl.dr. 2
 Tincture of Peru balsam..drops 40
 Alcoholfl.oz. 2
 Rose water.....fl.oz. 14
 Mix the tinctures and alcohol and then add rose water gradually and with vigorous agitation.

III. German formula:

Diluted solution of lead subacetatefl.dr. 4
 Spirit of lavender.....fl.oz. 1
 Alcoholfl.oz. 2
 Rose water.....fl.oz. 12

While this formula is given here for the sake of completeness, its use is not recommended owing to the presence of the poisonous lead compound.

It will be observed that this is entirely different from the others.

IV.

Boraxgr. 20
 Tincture of benzoin.....fl.dr. 1
 Glycerinfl.oz. 1
 Alcoholfl.oz. 1
 Rose water.....fl.oz. 4

TOILET LOTIONS.

Under this title are included a miscellaneous assortment of preparations which are employed instead of some of the preceding "creams" and "milks" for roughness of the skin, cracked hands, chapped lips, etc. They may be denominated "face lotion," "glycerin lotion," "cosmetic lotion," "chap lotion," "benzoin lotion," or any other name that may seem appropriate.

The following lotion is an excellent one:

I.

Honeydr. 2
 Boraxdr. 2
 Castile soap, white.....dr. 4
 Glycerinfl.oz. 2
 Alcoholfl.oz. 2
 Water, to make.....fl.oz. 16
 Cochineal coloring or solution of carmine, N. F., sufficient to color.

Dissolve the soap and borax in the water by the aid of heat, allow to cool, add the other ingredients, let stand for 24 hours, and filter.

Benzoin Lotion (Lait Virginal).

II.

Tincture of benzoin.....fl.dr. 4
 Rose water, to make.....fl.oz. 16
Benzoin and Glycerin Lotion.

A mixture of glycerin, tincture of benzoin and rose water is a common household lotion for the hands or face,

and the usual method of mixing these is unsatisfactory. The following improved methods have been suggested:

III.

Tincture of benzoin.....fl.dr. 6
Glycerinfl.oz. 4
Rose water, to make.....fl.oz. 16

Mix the glycerin and rose water in a bottle, shaking well. Then very carefully pour the tincture on top of the mixture, cork the bottle, and slowly invert the latter once or twice without shaking it.

IV.

Tincture of benzoin.....fl.dr. 3
Glycerinfl.oz. 8
Rose water, to make.....fl.oz. 16

Add the tincture, in repeated portions to 4 fluidounces of glycerin, agitating thoroughly after each addition. Allow the mixture to stand for an hour, and then add, in small amounts and with thorough agitation, enough rose water to make 8 fluidounces. Strain the mixture at once through a very finely meshed cloth, rubbing it through with a glass rod or bone spatula. This operation should be repeated 3 or 4 times. Allow the mixture to stand for several hours, add the remainder of the glycerin and shake well, and then add the rose water and again agitate thoroughly.

This preparation is best not prepared extemporaneously but should be made as above and kept as a stock product.

Glycerin Lotion.

V.

Glycerinfl.oz. 3
Rose or orange flower
waterfl.oz. 13

This may be tinted with solution of carmine or cochineal coloring if desired.

VI.

Glycerinfl.oz. 8
Waterfl.oz. 8
Boraxdr. 1
White heliotrope or other
extractsufficient

VII.

Glycerinfl.oz. 3
Alcoholfl.oz. 1

Orange flower water.....fl.oz. 2
Waterfl.oz. 10
Boraxdr. 2
Oil of neroli.....drops 8
Oil of bergamot.....drops 12
Oil of lemon.....drops 15
Jasmine extract.....fl.dr. 2

Dissolve the borax in the water, and the oils in the alcohol. Mix the two liquids, add the other ingredients, and filter clear through talcum. This may be colored with cochineal coloring or solution of carmine.

Menthol Lotion.

VIII.

Mentholgr. 20
Tincture of quillaia.....fl.dr. 4
Glycerinfl.oz. 2
Water, to make.....fl.oz. 16
Perfume, to suit.

Dissolve the menthol and perfume in the tincture, mix the glycerin and water, add this gradually to the solution, frequently agitating, then filter.

Peroxid Lotion.

IX.

Glycerinfl.oz. 6
Rose waterfl.oz. 6
Hydrogen peroxidfl.oz. 3

This acts as a bleaching agent to the skin.

Strawberry Lotion.

X.

Mashed strawberriesfl.oz. 16
White wine vinegar.....fl.oz. 16
Rose waterfl.oz. 8

Mix the strawberries and vinegar, macerate for 24 hours, strain through muslin, and to the colature add the rose water.

This is recommended by a "beauty expert" as an astringent wash for relaxed muscles.

Witch Hazel Lotion.

XI.

Glycerinfl.oz. 4
Rose waterfl.oz. 4
Distilled ext. of witch hazel..fl.oz. 8

"White Glycerin."

In different parts of the country various preparations are put up and sold as "white glycerin." The following are some of the formulas:

I.

Bismuth subnitratedr. 2
Glycerinfl.oz. 4

Mix thoroughly by trituration in a mortar.

II.

Cologne waterfl.oz. 1
Rose waterfl.oz. 1
Glycerinfl.oz. 6

III.

Tincture of benzoin.....fl.oz. 2
Glycerinfl.oz. 4

IV.

Quince seeddr. 1
Borax, powderdr. 1
Cologne waterfl.oz. 2
Hot waterfl.oz. 4
Glycerinfl.oz. 10

Macerate the quince seed in the water for 2 hours, strain, to the mucilage add the other ingredients, and dissolve the borax by agitation.

TOILET OR COSMETIC JELLIES.

These are preparations of stiff or thick consistence intended as emollient toilet applications. The body consists of gelatin, starch, tragacanth or similar substance, but most often gelatin is employed. This should be colorless and odorless and otherwise of good quality, there being many inferior grades of gelatin. On account of the varying absorptive power of different kinds of gelatin for water, the qualities given in these formulas may require slight change to produce a jelly of the requisite firmness, but it is believed that the quantities mentioned will usually prove satisfactory.

Starch and tragacanth in the form of the official glycerites are also good bodies for these jellies.

Other common ingredients are glycerin, water and perfume ("extract," essence, volatile oil or synthetic). The perfume should preferably be one that does not cause opalescence, a transparent product being much handsomer in appearance.

Other additions are boric, carbolic or salicylic acid, fluid extract or tincture of arnica or calendula, and distilled extract

of witch hazel. These jellies may also be tinted a rose color with cochineal coloring or solution of carmine, N. F.

Owing to their thickness, these preparations must be dispensed in wide-mouthed bottles, screw-cap jars, or collapsible tubes.

They are used as applications to the face, hands, lips, etc., to heal chaps, remove roughnesses, soothe the skin, etc., like the toilet creams, milks and lotions.

The common appellation for these jellies is "glycerin jelly." If containing arnica, they may be known as "arnica jelly"; if containing calendula, "calendula jelly"; witch hazel, "witch hazel jelly"; if carbolic acid, "carbulated glycerin jelly"; if tinted a rose color and flavored with oil of rose, "rose jelly" or "jelly of roses," etc.

Glycerin Jelly.

I.

Gelatinav.oz. $\frac{3}{4}$ to 1
Boric acidav.oz. 1
Glycerinfl.oz. 12
Waterfl.oz. 20
Perfume, to suit.

Dissolve the gelatin in the water by the aid of heat, also the acid in the glycerin, mix the two solutions, allow to cool somewhat and incorporate the perfume.

The amount of gelatin may be varied to suit the thickness desired.

II.

Gelatinav.oz. $1\frac{1}{2}$
Glycerinfl.oz. 24
Waterfl.oz. 5
Oil of rose.....drops 3
Oil of lavender flowers....drops 15

Soak the gelatin in the mixed glycerin and water for 12 hours, then heat on a water bath until dissolved, and finally add the oils.

Other perfume may be used. Also other additions may be made; carbolic acid, for example, would make it a carbulated glycerin jelly.

III. Glycerite of starch or of tragacanth may also be used for making a toilet jelly. Any desired perfume may be added; other additions may be made such as carbolic or boric acid. It may

also be colored pink with cochineal coloring or solution of carmine.

IV.

Gelatin or isinglass.....av.oz.	1
Glycerin	av.oz. 20
Water	av.oz. 20
Boric acid	dr. 2

Soak the gelatin in the water until soft, then heat until dissolved; and, when it cools down a little, add the white of an egg to it. Mix well, and again heat, to coagulate the albumin; add the other ingredients, and strain while hot. Perfume with any desired odor. If the gelatin gives a clear solution, the white of egg need not be added.

Glycerin and Honey Jelly.

A small amount of honey may be added to any of the preceding glycerin jellies or the following may be used:

V.

Glycerin	fl.oz. 4
Clarified honey	fl.dr. 4
Distilled water	fl.oz. 8
Gelatin	av.oz. 1½
Oil of lavender flowers....	drops 12

Soak the gelatin in the water and honey until it softens and swells up; then melt by the aid of heat, and add the glycerin, previously warmed, strain through fine muslin, and when nearly cool add the perfume and pour into wide-mouthed bottles or screw-cap jars.

Arnica Jelly.

Any of the preceding glycerin jellies may be converted into an arnica jelly by replacing a portion of the water or glycerin with tincture or fluid extract of arnica, or the following may be used:

VI.

Fluid extract of arnica....	fl.oz. 1
Glycerin	fl.oz. 6 to 8
Gelatin	av.oz. 1
Water	fl.oz. 16

Cover the gelatin, contained in a suitable vessel, with the water; allow it to macerate until soft and pliable; then heat with the water and add the glycerin, the quantity of the latter varying with the season, using more in the winter than in hot weather. When dissolved, add the fluid extract, and transfer to containers.

Calendula Jelly.

This may be made like any of the preceding arnica jellies, but substituting fluid extract of calendula for the fluid extract or tincture of arnica, or use the following:

VII.

Glycerite of starch.....av.oz.	14
Fluid extract of calendula..	fl.oz. 1½
Cochineal coloring or solution of carmine, sufficient to color a rose tint.	
Oil of rose, sufficient to perfume.	

Lanolin Jelly or Glycerite.

VIII.

Glycerite of starch.....av.oz.	12
Wool-fat, hydrous	av.oz. 4

Triturate the fat with a small portion of glycerite until thoroughly mixed, then add the remainder of the glycerite gradually, rubbing thoroughly after each addition. Any suitable perfume may be added. The glycerite had best be slightly warmed before adding the wool-fat.

Witch Hazel Jelly.

Any of the glycerin jellies may be used by substituting distilled extract of witch hazel for a portion of the water, or use the following:

IX.

Gelatin	av.oz. 1
Glycerin	fl.oz. 3
Distilled ext. of witch hazel..	fl.oz. 20

Dissolve the gelatin in the mixed glycerin and extract with the aid of a water-bath, then strain, and perfume if desired.

SOLIDIFIED GLYCERIN (Glycerin Honey).

Several combinations have received this name, one being glycerite of starch, which is suitably perfumed and dispensed in screw-cap jars, wide-mouthed bottles or collapsible tubes.

Another is prepared as follows:

Transparent soap	av.oz. 1
Water	fl.oz. 4
Glycerin	fl.oz. 24
Perfume, to suit.	

Cut the soap into fine shavings, heat on a water bath with 4 fluidounces each of glycerin and water until dissolved, oc-

casionally adding water to restore the original volume, then add the remainder of the glycerin and the perfume, and transfer to suitable containers.

This is to be used as an application to the skin like the glycerin jellies.

CAMPHOR ICES. (Compound Camphor Cerate.)

These are solid preparations containing fatty bodies like wax and spermaceti in combination with camphor, and are intended for inunction of the hands and face where there is roughness or cracking of the skin. They are prepared by melting the fatty substances, allowing to cool somewhat, stirring in the camphor, allowing to cool, adding aromatic oils, if the latter are used, and pouring into molds. The best material for the latter is block tin. These may be chilled before casting the mixture, as this renders adhesion less likely. Much cheaper, though less elegant, molds may be made of tinned iron. The mixture may be poured into a large mold and the mass may subsequently be cut into smaller oblong cakes, or the mixture may be at once poured into individual molds.

The usual way of putting up camphor ice for sale is to wrap it first in thin oiled paper, then in an outer covering of tin-foil, and lastly to enclose it in a paper or ornamental tin box.

Camphor ice may be known by this title; if it contain glycerin as "glycerin camphor ice"; if containing cocoa butter as "cocoa camphor ice," and if containing petrolatum as "petrolatum camphor ice."

The quantity of camphor in these formulas may be altered within very wide limits. Larger or smaller amounts may be used at the option of the operator.

I. Formula of the National Formulary:

White wax	av.oz. 2½
Spermaceti	av.oz. 8
Castor oil	av.oz. 4¼
Camphor	av.oz. 1¾
Benzoic acid	gr. 75
Carbolic acid	gr. 15
Oil of bitter almond.....	drops 12

Melt the wax and spermaceti on a water bath, add the oil and camphor, the latter first broken into small pieces, and continue the heating and stirring until the camphor is dissolved. Then withdraw the heat, cover the vessel, and when the mixture has cooled somewhat, add the remaining ingredients, and thoroughly incorporate by stirring. Lastly, pour into molds, allow to solidify, cut into small blocks, and wrap and box in the usual manner.

II.

White wax	av.oz. 5
Spermaceti	av.oz. 2
Benzoinated lard	av.oz. 7½
Camphor	av.oz. 1½

Prepare like the preceding.

III.

Spermaceti	av.oz. 7
Lard	av.oz. 4
Wool-fat, hydrous.....	av.oz. 1½
Sweet almond oil.....	fl.oz. 6
Camphor	av.oz. 1
Benzoic acid	gr. 20
Oil of cajuput.....	drops 30

Prepare like No. I.

IV.

Paraffin wax.....	av.oz. 8
Spermaceti	av.oz. 4
White wax.....	av.oz. 4
Sweet almond oil.....	fl.oz. 16
Camphor, powdered.....	av.oz. 1

Prepare like No. I.

V.

White wax.....	av.oz. 5
Spermaceti	av.oz. 5
Stearin	av.oz. 8
Lard	av.oz. 10
Camphor	av.oz. 2

Prepare like No. I.

Cocoa Camphor Ice.

VI.

Cocoa butter	av.oz. ½
White wax	av.oz. 3
Benzoinated lard	av.oz. 4
Spermaceti	av.oz. 8
Camphor	av.oz. 1½

Prepare like any of the preceding camphor ices.

Glycerin Camphor Ice. (Compound Glycerin Cream.)

VII.

White wax	av.oz. 2½
Spermaceti	av.oz. 2½

Stearin (stearic acid).....av.oz.	4
Lard	av.oz. 5
Borax, powder	gr. 30
Glycerin	fl.dr. 4
Camphor	av.oz. 1

Melt the first four ingredients on a water bath. Dissolve the borax in the glycerin. Add the latter gradually to the former; when at the point of cooling, stir well, add the camphor in pieces, stir again until dissolved and pour into molds.

It is not possible to add much glycerin to camphor ice. The above contains about as much as it will take up.

Petrolatum Camphor Ice.

VIII.

Paraffin wax	av.oz. 5
White petrolatum	av.oz. 8
White wax	av.oz. 3
Camphor	av.oz. 1

Melt the two waxes together at a gentle heat, add the petrolatum and camphor, the latter in small pieces or powdered, stir until the camphor is dissolved, pour the mixture into molds, allow to cool, cut into small cakes, and wrap and box in the usual manner.

IX.

White wax	av.oz. 1½
Spermaceti	av.oz. 6½
White petrolatum	av.oz. 1
Camphor	av.oz. 1

Prepare like the preceding.

CAMPBOR BALL.

This is the same thing as camphor ice. The following formula may be used:

Spermaceti	av.oz. 3
White wax	av.oz. 9
Cottonseed oil	av.oz. 3½
Camphor	av.oz. 3

Prepare like camphor ice and put up for sale in the same manner.

TOILET OR COSMETIC POMADES.

Hard preparations, which may be called toilet pomades, intended to take the place of the softer "cold cream" and of camphor ice, may find a ready sale. These preparations are not so greasy as "cold cream" and may be carried about readily in the pocket or hand-bag. Formulas for a number of such preparations are here given as well as for some other

similar articles. These may be put up like camphor ice or be dispensed in fancy jars.

Cocoa Emollient.

I.

Cocoa butter	av.oz. 6
White wax	av.oz. 6
Sweet almond oil.....	fl.oz. 6
Oil of lavender flowers.....	fl.dr. 2
Oil of rosemary.....	fl.dr. 2

Melt the wax and cocoa butter at a gentle heat, then incorporate the oils. Other aromatic oils may be added, also synthetic perfumes, or these may be omitted entirely, the cocoa butter having a pleasant aroma of its own.

This product may be dispensed in cakes like camphor ice.

It is a pleasant application for the skin to take the place of the softer "cold creams" and of camphor ice which is objectionable to some persons.

II.

Cocoa butter	av.oz. 12
Sweet almond, castor or cottonseed oil	fl.oz. 4

Melt the cocoa butter, add the oil, allow to congeal, and form into cakes. It may be perfumed with oil of rose or other perfume.

It may be used like No. I.

• Almond Tablets.

III.

Spermaceti	av.oz. 4
White wax	av.oz. 8
Sweet almond or other similar oil	fl.oz. 4
Oil of bitter almond.....	drops 40
Oil of pimento.....	drops 10

Prepare like camphor ice and put up in the same manner.

Menthol Tablet.

Prepare like almond tablet but substituting 2 or 3 drams of menthol for the oils.

Scented Paraffin Cakes.

IV.

Paraffin wax	av.oz. 5
White petrolatum	av.oz. 10
Heliotropin	gr. 50
Oil of bergamot.....	drops 25
Oil of lavender flowers....	drops 25
Oil of clove.....	drops 10

Prepare like the preceding tablets.

Lanolin Pomade.

Under this heading is included a fatty combination consisting mainly of wool-fat, which may be put up in stick form by the method of casting in molds as described under Camphor Ice, which see.

V.

Mutton suet	av.oz. 3
Wool-fat, hydrous.....	av.oz. 6
Boric acid, powder.....	av.oz. 1

Melt the suet, add the wool-fat, stir in the acid, and form into sticks.

LANOLIN PASTE OR CREAM.

I.

Wool-fat, hydrous	av.oz. 2
Tincture of quillaja.....	fl.oz. 1
Gelatin	av.oz. $\frac{3}{4}$
Glycerin	fl.oz. 4
Water	fl.oz. 15
Perfume, to suit.	

Dissolve the gelatin in the water by the aid of heat, triturate the wool-fat with the tincture of a warm mortar until emulsified, then incorporate the warm gelatin solution, and finally add any desired perfume.

This paste is to be used for the same purposes as "cold cream" or toilet jelly.

II.

Wool-fat, hydrous	av.oz. 2
White petrolatum	av.oz. 6
Glycerin	fl.oz. 4 to 8
Perfume, to suit.	

This is also an excellent toilet preparation. It may be made softer or harder by the addition of the larger or smaller quantity of glycerin.

Mentholated Lanolin Cream.

III.

Menthol	gr. 40
Salol	gr. 80
Olive oil.....	fl.dr. 2
Wool-fat, hydrous.....	av.oz. 8

Triturate the menthol and salol together until liquefied, then incorporate the oil and fat.

ALMOND MEAL. (Mandelklei.)

This is a preparation used in place of soap, for cleaning the face and hands, more particularly the latter. It is generally made from bitter or sweet almonds, usually the latter, or from almonds from which the oil has been ex-

pressed. Whichever is used it must be reduced to either a fine or a moderately fine powder, and then mixed with various other detergent agents such as powdered orris root, soap, wheat flour, borax, etc., and also with aromatic agents such as oils of bitter almonds, lemon, bergamot, etc., or synthetics. The almonds may be blanched or not, the product in the former case being much lighter in color.

In some formulas the almonds are entirely omitted, as the detergent properties are mainly due to other ingredients any way.

I.

Sweet almonds, blanched and powdered	av.oz. 8
Wheat flour.....	av.oz. 8
Orris root, powder.....	av.oz. 4
Oil of lemon.....	fl.dr. 2
Oil of bitter almond.....	drops 8

II.

Sweet almonds.....	av.oz. 8
Rice flour.....	av.oz. 8
Orris root, powder.....	av.oz. 4
White castile soap, powder.....	av.oz. 1
Borax, powder.....	av.oz. 1
Oil of bitter almonds.....	drops 20

Blanch the almonds, then dry them, powder them in a mortar, and mix intimately with the other ingredients.

III.

Corn starch.....	av.oz. 5
Orris root, powder.....	av.oz. 15
Talcum	av.oz. 25
Borax, powder.....	av.oz. 4
Oil of bergamot.....	drops 30
Oil of lemon.....	drops 10
Oil of neroli.....	drops 5
Tincture of musk.....	drops 15

This formula does not call for almond, hence the name almond meal is a misnomer. However, it is an excellent detergent agent. Any of the preceding formulas may also be used if the almond is omitted and will furnish desirable products.

Sanded Almond Meal. (Sand Mandelklei.)

This is offered for use in various unclean conditions of the skin when the preceding is not sufficiently detergent.

IV.

Borax	av.oz. 1
Glycerin	fl.oz. 2
Sand	av.oz. 8
Sweet almonds, powdered, or ground almond-meal cake	av.oz. 20
Oil of bitter almond or benzaldehyde	fl.dr. 1

Dissolve the borax in the glycerin by the aid of heat, mix this intimately with the sand, and then add the other ingredients. The sand must be white sand in the finest possible powder.

TOILET OATMEAL.

This is to be used for the same purposes and in the same manner as almond meal, which see.

I.

Oatmeal	av.oz. 8
Sweet almonds	av.oz. 8
Perfume	to suit

The almonds may be blanched or not, as preferred, or the residue after extraction of oil may be used.

II.

Oatmeal, fine powder	av.oz. 16
Orris root, powder	av.oz. 2
Oil of neroli	drops 10
Oil of bergamot	drops 20

Or 10% solution of ionone may be substituted for the oils. The proportions of oatmeal and orris may also be altered at will.

PISTACHIO MEAL.

This may take place of almond meal.	
Pistachio nuts, powdered	av.oz. 8
Orris root, powdered	av.oz. 8
Oil of neroli	drops 20
Oil of lemon	drops 20

ALMOND PASTE. (Amandine.)

These are used for cleansing purposes the same as almond meal. In fact the meals may be converted into pastes by the addition of sweet almond oil or soft soap and plain or rose water or glycerin.

I. Mme. Qui Vive's formula:

Bitter almonds	av.oz. 7
Orris root, powder	av.oz. 1½
White castile soap powder	av.oz. 1½
Glycerite of starch	av.oz. 3½
Honey	oz. 2

Oil of lavender flowers	fl.dr. 1
Oil of bergamot	fl.dr. 1
Oil of bitter almond	drops 8

Blanch the almonds, heat them with a small quantity of water to a smooth paste, add the other ingredients, and mix intimately. It may be colored with a solution of cochineal. The bitter almonds may be replaced by sweet almonds.

II.

Sweet almonds	av.oz. 24
Rice flour	av.oz. 4
Orris root, powder	av.oz. 4
White castile soap, powder	av.oz. 2
Spermaceti	av. ½
Sweet almond oil	av.oz. 2
Oil of rose	drops 15
Oil of bitter almond	fl.dr. 1
Oil of bergamot	fl.dr. 2
Rose water	sufficient

Blanch the almonds in the usual manner, then rub to powder in a mortar, add the rice flour and orris root and beat with enough rose water to make a smooth paste. Also melt the spermaceti, add the sweet almond oil and the soap, and with this gradually and thoroughly incorporate the previously prepared mixture. Finally add the volatile oils.

III.

Honey	fl.oz. 4
Soft (green) soap	av.oz. 2
Peru balsam	dr. 2
Oil of bergamot	fl.dr. 1
Oil of bitter almond	fl.dr. 1
Sweet almond oil	fl.oz. 14

Triturate the sweet almond oil to a smooth paste with the soap, then gradually incorporate the honey and other ingredients.

IV.

Soft (green) soap, light color	av.oz. 17
White castile soap, powder	av.oz. 3
Talcum	av.oz. 5
Borax, powder	av.oz. 1½
Sodium carbonate, dried	av.oz. ¼
Oil of bitter almond	fl.dr. 2
Cologne water	fl.oz. 1
Glycerin	fl.oz. 2
Rose water, fl.oz. 3 or	sufficient

Dissolve the borax and sodium carbonate in the rose water and glycerin,

and rub this and the oil and cologne with the two soaps to form a smooth mixture, after which the talcum is to be incorporated. More rose water may be added in the meantime to make a mass of the requisite consistency.

PASTE OR OINTMENT FOR COSMETIC GLOVES.

By cosmetics gloves are meant kid or cotton gloves several sizes too large, which are to be smeared on the inside with any suitable paste, ointment or cream, and then to be worn at night for the purpose of softening the hands or keeping them soft or for healing cracked skin. "Cold cream" or any other kind of a cream or emollient may be used on the gloves, and the following are also recommended.

I.

This preparation has been recommended by a "beauty expert" under the name "honey and almond paste for cosmetic gloves":

Almond meal.....	av.oz. 4
Sweet almond oil.....	fl.oz. 8
Honey	fl.oz. 8
Egg yolk.....	fl. or av.oz. ½

Knead the almond meal, honey, and egg-yolk together, then add the oil, and work up into a smooth paste.

II.

Here is another paste also offered by a "beauty expert":

Sweet almond oil.....	fl.oz. 2
Glycerin	fl.oz. 1
Rice flour.....	av.oz. 1
Rose water.....	fl.oz. 6
Tincture of benzoin.....	fl.dr. 3
Yolk of 2 eggs.	

Rub up the oil, glycerin, rice flour, and egg yolk together, then incorporate the rose water and benzoin.

COMPLEXION OR FACE POWDERS.

Complexion powders contain such constituents as talcum, starch, precipitated chalk, bismuth subnitrate, oxid, hydrate, subcarbonate or oxychlorid, zinc oxid, magnesium carbonate or oxid, and orris root, together with suitable perfume and with coloring matter if a colored powder be desired. These solids

must be in the form of fine powder, must be intimately mixed, and then sifted through a fine bolting cloth sieve; whatever fails to pass through the sieve must be returned to the mortar and be still further trituated until all will pass through. If colored powder is to be prepared, the coloring matter should be added to the powder before sifting and should be very thoroughly trituated with a small portion of the powder before adding the remainder of the powder. After sifting, the perfume may be added; the whole should be again passed through the sieve to break up any lumps which may have formed by the addition of the moist perfume to the dry powder.

If a flesh-colored powder is desired, carmine is employed as the coloring agent. A so-called pink powder is more reddish than the flesh-colored, and more carmine may be used, or also Armenian bole. Sometimes a brunette powder is desired and then burnt umber or sienna is used as the coloring agent; cream powder is prepared by the use of cadmium yellow or chrome yellow (lead chromate), a trace of carmine being added sometimes; a rachel tint is imparted by means of powdered turmeric or yellow ochre. In the formulas given below, no coloring agents are mentioned, being intended that these should be added only as desired.

In preparing face powders, the best materials should be employed. For example, Hubbuck's or other first-class zinc oxid should be used. The best talcum is what is known as Venetian chalk; the best precipitated chalk is the kind known as the English; the preferred bismuth compounds are the light variety which are now readily obtainable. Owing to their poisonous nature, lead and mercury compounds such as flake white and calomel should never be used.

The perfume may be altered at pleasure. Various combinations of essential oils, "extracts," and synthetics may be

used. Essential oils may always be replaced by the corresponding synthetics as oils of rose and ylang ylang by the artificial oils, oil of bergamot by linalyl acetate, and so on.

It may be mentioned here that the so-called "rice powders" contain little or no rice flour or starch and this substance possesses no particular merit as a cosmetic any way.

I.

Talcum, powder.....	av.oz. 10
Starch	av.oz. 1
Orris root.....	av.oz. 1
Oil of bergamot.....	drops 8

II.

Talcum, powder.....	av.oz. 16
Bismuth oxid.....	av.oz. 1
Zinc oxid.....	av.oz. 1
Perfume to suit.	

III.

Rice powder.....	av.oz. 14
Zinc oxid.....	av.oz. 4
Precipitated chalk.....	av.oz. 4
Talcum powder.....	av.oz. 2
Orris root, powder.....	av.oz. 2
Perfume to suit.	

IV.

Rice flour.....	av.oz. 16
Zinc oxid.....	av.oz. 2
Orris root, powder.....	av.oz. 2
Oil of rose.....	drops 9
Oil of rose geranium.....	drops 3
Oil of ylang ylang.....	drop 1

Mix the first three ingredients, mix the other ingredients and incorporate this mixture with the powder.

V.

Corn starch.....	av.oz. 15
Talcum, powder.....	av.oz. 5
Zinc oxid.....	av.oz. 5
Chalk, prepared.....	av.oz. 2½
Essence of jasmine.....	f.dr. 4
Oil of bergamot.....	drops 15
Oil of rose.....	drops 8
Oil of neroli.....	drops 8
Oil of ylang ylang.....	drops 2
Oil of orris, liquid.....	drop 1
Tincture of musk.....	drops 5

VI.

Corn starch.....	av.oz. 7
Talcum, powder.....	av.oz. 7
Zinc oxid.....	av.oz. 4
Orris root, powder.....	av.oz. 2

Oil of bergamot.....	drops 20
Oil of rose.....	drops 10
Oil of neroli.....	drops 5
Tincture of musk.....	drops 4

Mix the first four ingredients intimately, and add the oils and tincture.

Consuelo Face Powder.

VII. Mme. Qui Vive's:

Talcum	av.oz. 10
Rice flour.....	av.oz. 10
Zinc oxid.....	av.oz. 5
Oil of ylang ylang.....	drops 4
Oil of bergamot.....	drops 4
Oil of neroli.....	drops 4

This is also known as "Sarah Bernhardt's face powder," also as "La Diaphane."

Fatty Face Powder.

Fat in the form of wool-fat is introduced into some face powders, owing to dryness of the skin or to prevent the latter from becoming dry and scaly. The fat imparts to the powder a desirable smoothness, increases the power of adherence to the skin, and helps to preserve the latter in a smooth and supple condition.

To prepare such a powder anhydrous wool-fat is dissolved in some volatile solvent like ether or chloroform, this solution is rapidly and intimately mixed with the powdery ingredients, the mixture is spread out and exposed to the air until all the solvent has vaporized, and the residue triturated with the remaining ingredients of the face powder. Anhydrous wool-fat is soluble in two parts of ether and it has been suggested that this solution be mixed intimately with enough magnesium carbonate to make up three times the weight of the wool-fat originally employed. After exposure to the air to dry, other ingredients are to be added. The mixture may be perfumed and colored in the usual manner. Instead of magnesium carbonate, any other absorbent powder may be employed. If there be no anhydrous wool-fat on hand, the hydrous kind may be used by shaking it with the requisite amount of ether and allowing

the mixture to stand for several days so that the ethereal and aqueous portions may separate. The ethereal portion may then be used in the regular manner:

COMPLEXION TABLETS.

Any of the preceding powders may be converted into the tablet or cake form by beating into a stiff paste with water, pressing into suitable molds, and then drying. It may be necessary to add a small amount of powdered tragacanth to hold the powder together while it is being made into the mass form.

LIQUID COSMETICS. (Liquid Face Paints.)

Any of the face powders may be converted into lotions by mixing with water, which may or may not be perfumed or colored; a small amount of glycerin is frequently added. The powders do not dissolve, but are simply suspended by shaking. These liquids are used instead of face powders.

Substances suitable for the purpose indicated are: Prepared chalk, magnesium carbonate, zinc oxid, the oxychlorid or subnitrate of bismuth. The last two resemble chalk in density, but much excel it in whiteness.

Unscrupulous or careless persons sometimes use white lead (flake white) in the preparation of cosmetics, and calomel is said to be the chief ingredient of a proprietary cosmetic that has had some reputation. The character of both these substances renders their use for such purposes dangerous, as even external application may produce the constitutional effects of lead or mercury.

In making these preparations a perfectly smooth mixture must be made by long trituration, preferably rubbing the powder first with the glycerin. If a white preparation is desired, no coloring agent is added; but if a flesh-colored preparation, then solution of carmine or an alcoholic solution of eosin must be added. No coloring agent or perfume is mentioned in the formulas below as these may be added as desired.

These liquid cosmetics are usually known by such titles as "face or skin enamel," "oriental cream," "pearl cream," "liquid pearl," "balm," "liquid face paint," etc. They are usually dispensed in white (opaque) bottles.

I.

Zinc oxid.....	av.oz.	1½
Bismuth oxychlorid.....	av.oz.	1½
Glycerin	fl.oz.	2
Water	fl.oz.	24
White rose extract.....	fl.oz.	4

Rub the powders with the glycerin to a very smooth paste, then add the water and perfume.

II.

Zinc oxid.....	av.oz.	4
Glycerin	fl.oz.	12
Water	fl.oz.	16
Oil of bergamot.....	drops	8
Oil of lemon.....	drops	8

III.

Bismuth oxychlorid.....	av.oz.	3
Precipitated chalk.....	av.oz.	6
Glycerin	fl.oz.	1½
Water	fl.oz.	30

IV.

The following "bismuth cream" is an excellent face enamel:

Bismuth subnitrate.....	av.oz.	10
Nitric acid, U. S. P.....	fl.oz.	5
Ammonium carbonate.....	av.oz.	8½
Distilled water.....	fl.oz.	50
Glycerin, to make.....	fl.oz.	16

Mix the acid with 4½ fluidounces of water, in this dissolve the bismuth subnitrate, and pour the mixture very slowly and with constant stirring into a solution of the ammonium carbonate in the remainder of the water. Allow the precipitate to subside, wash it twice with water by decantation, collect on a fine muslin strainer, allow to drain, and mix the residue with enough glycerin to make 16 fluidounces. Dilute this with more water to the required consistency, and perfume and color as desired.

V.

Zinc sulfate.....	av.oz.	10
Sodium carbonate.....	av.oz.	10
Talcum	av.oz.	6
Distilled water.....	sufficient	
Essence of jasmine.....	fl.dr.	2½
Oil of bergamot.....	drops	10

Oil of rose.....drops	5
Oil of neroli.....drops	5
Oil of ylang ylang.....drop	1
Oil of orris, liquid.....drop	1
Tincture of musk.....drops	5

Dissolve the zinc sulfate and sodium carbonate each in 32 fluidounces of distilled water, then slowly pour these solutions simultaneously, with constant stirring into 10 pints of distilled water. Collect the precipitate on a fine muslin strainer, allow it to drain, transfer it to a mortar, triturate it intimately with 6½ av. ounces of finely powdered talcum and add enough distilled water to make the mixture weigh 32 av. ounces. Lastly add the oils and tincture.

VI.

The following is a modification of the old familiar flake white mixture:

Flake white.....av.oz.	8
Glycerinfl.oz.	1
Bay rum.....fl.oz.	1
Rose water.....fl.oz.	1
Waterfl.oz.	24

Various proportions of these ingredients may be used and other perfumes may be added. Owing to the poisonous character of the flake white it is advisable to replace it with zinc oxid.

ROUGES.

These are preparations of deep red tint employed usually for heightening the color of the cheeks. They may be in liquid, ointment, or tablet forms. The coloring agent is either carmine, eosin, or rosanilin. The liquid preparations receive a fanciful name like "vinegar rouge," (if a small amount of acetic acid be added) "maiden's blush," or "bloom of roses." The tablet form is usually called "theater rouge."

Nos. VI and VII are different from the others; they contain alloxan, which turns on exposure.

I.

Carminedr.	1
Ammonia water.....fl.dr.	6
Waterfl.oz.	7
Spirit of rose.....fl.dr.	2

Mix, set aside 24 hours or longer if necessary, agitating frequently till the ammonia has evaporated, then filter.

II.

Eosingr.	24
Waterfl.dr.	3
Glycerinfl.dr.	1
Alcoholfl.oz.	4½
Cologne water.....fl.oz.	3
Mix and dissolve.	

III.

Rhodamingr.	8
Eosingr.	16
Glycerinfl.dr.	2
Oil of rose, artificial.....drops	8
Alcoholfl.oz.	1
Rose water, to make.....fl.oz.	8

Dissolve the rhodamin and eosin in the rose water by the aid of heat, add the glycerin, allow to cool, and add the oil of rose dissolved in the alcohol.

IV.

Carminedr.	1½
Acacia, powder.....dr.	3
Talcumav.oz.	4

Mix all intimately, rubbing to very fine powder, then add water in small proportions to make a doughy mass, and form into round tablets of about the diameter of a silver dollar.

V.

Paraffin wax.....av.oz.	4
Petrolatum, white.....av.oz.	6
Eosindr.	4
Oil of bitter almond.....drops	20

Heat the paraffin at a gentle heat, add the petrolatum, stir well, allow to cool somewhat, and finally add the oil.

VI.

This preparation has been called Schnonda or Rose Sympathique. It contains alloxan, a white crystalline substance derived from uric acid which turns red on exposure to the air. It is best mixed with fatty substances to form a white cream, as follows:

Sweet almond oil.....fl.oz.	6
Spermacetiav.oz.	1½
White wax.....av.oz.	1½
Distilled water.....fl.oz.	2
Alloxandr.	1½
Oil of bergamot.....m.	75
Oil of lemon.....m.	30
Oil of rose, synthetic.....m.	15

Melt the spermaceti and wax together, add the alloxan, and rub together until the latter is well mixed. Now add the

warmed almond oil and rose water, and continue trituration until a smooth cream is obtained.

In using, rub this cream lightly upon the skin; the atmosphere causes the anointed parts to turn reddish.

VII.

Lard	av.oz. 4
White petrolatum.....	av.oz. 4
Alloxan	dr. 1
Oil of orris, liquid.....	drops 20

Melt the lard and petrolatum, rub the alloxan with this mixture, and incorporate the oil.

Use like the preceding.

GREASE PAINTS.

A good basis for grease paints for theatrical purposes, for eye-brow pencils, and for stick cosmetics may be made according to the following formula:

Cersin	av.oz. 3
Petrolatum	av.oz. 4
Wool-fat	av.oz. 4
White wax.....	av.oz. 6
Olive oil.....	av.oz. 12

Melt the white wax and cersin together, add the petrolatum and wool-fat, and when all are melted, incorporate the oil. The coloring substance should be triturated uniformly and to the desired color with a sufficiency of powdered talcum, after which this is incorporated with the fatty mixture. The whole is then to be cast into suitable molds.

The coloring substance used depends on the color desired. The following are used: Zinc oxid, sienna, umber, carmine, rhodamin, eosin, animal charcoal, lampblack, and many of the anilines.

BLUE PENCILS FOR VEINS.

These are used to accentuate the course of the veins. They may be made with a basis the same as the grease paints, which see. Prussian blue is used as the coloring agent.

FACE BLEACHES. (Skin Whit-ners.)

Under this name are marketed a number of preparations of which the

principal or active constituent is corrosive sublimate. The use of such preparations is not countenanced, and the following formula is given only because the preparation is in occasional demand:

Mercury bichlorid.....	gr. 1
Emulsion of bitter almond..	fl.oz. 12
Tincture of benzoin.....	fl.dr. 1

The mercury salt is dissolved in the emulsion and the mixture gradually added to the tincture. This preparation does not keep long; should be kept in small opaque vials and be dispensed only with a "shake well" label.

The emulsion may be prepared from one av. ounce of bitter almond.

Other "bleaches" contain from one-half to one grain corrosive sublimate to the fluidounce.

The above is known as Hebra's Oriental Cosmetic Water.

Another similar preparation is Gowland's Cosmetic Lotion, which see.

Another preparation which is said to be used as a face bleach is this:

Lactic acid, U. S. P.....	fl.oz. 2
Glycerin	fl.oz. 4
Tincture of benzoin.....	fl.dr. 2
Water, to make.....	fl.oz. 32

Mix, perfume as desired, and filter clear through kaolin or talcum. It may also be tinted with carmine.

Hydrogen peroxid is the latest, most useful, and least harmful skin bleach. It is usually applied in a somewhat diluted form or in the form of peroxid cold cream or peroxid lotion. See formulas for latter.

The following is recommended as a cream containing hydrogen peroxid:

Hydrogen peroxid.....	fl.oz. 4
Glycerin	fl.oz. 3½
Borax, powder.....	dr. 2
Sweet almond oil.....	fl.oz. 2½
Wool-fat, hydrous.....	av.oz. 8

Triturate the wool-fat with the oil until well mixed, then thoroughly incorporate with this a solution of the borax in the glycerin and peroxid. This cream may be perfumed as desired.

Another cream of a different order, recommended for the same purpose is the following:

Ointment of ammoniated mercury	av.oz. 1
Ointment of zinc oxid.....	av.oz. 1
Sweet almond oil.....	fl.oz. 2
Wool-fat, hydrous.....	av.oz. 6
Borax, powder.....	dr. 3
Rose water.....	fl.oz. 2
Glycerin	fl.oz. 6
Nitric acid.....	drops 3

Mix the ointments, oil and fat, incorporate with a solution of the borax in the mixed glycerin and water, and finally add the acid.

Gowland's Cosmetic Lotion.

Bitter almonds.....	av.oz. 1¾
Mercuric chlorid.....	gr. 90
Ammonium chlorid.....	dr. 3
Alcohol	fl.oz. 3
Cherry-laurel water.....	fl.oz. 3½
Water	fl.oz. 10

Blanch the almonds, make an emulsion of them with the water, and strain; also dissolve the two chlorids in the cherry-laurel water, add the alcohol, and mix this liquid with the emulsion.

This is recommended for freckles and tan and as a skin bleach.

It should be applied at night and washed off in the morning, after which any toilet cream or emollient or "cold cream" should be applied.

Copeland's Cosmetic Water.

Emulsion of bitter almonds..	fl.oz. 3½
Borax	dr. 1
Tincture of benzoin.....	fl.dr. 2
Rose water.....	fl.oz. 4
Orange flower water.....	fl.oz. 4

The emulsion may be prepared from one-half av. ounce of bitter almonds.

This is to be used like the preceding.

Goddard's Cosmetic Lotion.

Mercuric chlorid.....	gr. 6
Tincture of benzoin.....	fl.dr. 2
Rose water.....	fl.oz. 6

HAND CLEANERS OR WHITENERS.

I.

This makes a nice hand-cleaning paste, especially adapted for ladies:

White castile soap, powder.	av.oz. 8
Orris root, powder.....	av.oz. 2
Corn starch.....	dr. 3
Glycerin	fl.oz. 3
Oil of neroli.....	m. 40
Oil of lemon.....	fl.dr. 1½

Rub the starch with the glycerin until well mixed, then heat in a porcelain capsule to about 285° F. until a translucent jelly is formed; then incorporate the other ingredients. More glycerin or some water may be added if it is too thick.

II.

This is recommended for dirt which is ground into the pores of the hands.

Egg albumen.....	av.oz. 5
Boric acid.....	dr. 5
Glycerin	fl.oz. 16
Distilled water, to make....	fl.oz. 32

Perfume, to suit.

Dissolve the acid in some of the water, mix this with the remaining ingredients, and strain.

In using, wash the hands in the usual manner, dry on a towel, then moisten lightly but thoroughly with the liquid and dry on a soft towel. Also apply at night before retiring, wiping slightly to remove superfluous liquid, or better still, wear cotton gloves during the night.

III.

White castile soap, powder.	av.oz. 5
Pumice, powder.....	av.oz. ½
Kaolin	av.oz. 7½
Sodium perborate.....	av.oz. 3½

This is an excellent cleanser and bleacher.

IV.

This ointment is recommended for whitening the hands:

Bismuth oxychlorid.....	av.oz. 1¼
Zinc oxid.....	av.oz. 2½
Olive oil.....	fl.oz. 6
Wool-fat, hydrous.....	av.oz. 15
Glycerin	fl.oz. 2½
Rose water.....	fl.oz. 5

TOILET AND NURSERY POWDERS.

(Infant Powders — Baby Powders — Dusting Powders.)

These are mixtures of talcum, starch, rice flour, boric acid, orris root, zinc oxid, and similar substances to which perfumes may be added. These powders should be reduced to an impalpable condition by sifting through a fine sieve. Especially is the fine condition required for nursery purposes.

These powders are not adapted to take the place of the so-called "face powders" as they are lacking in what may be termed "coating" quality (Deckkraft in German). They are applied to the face and neck by ladies after washing to overcome the shininess of the skin, and by men after shaving. In the nursery they are useful to apply to infant's bodies after bathing. In the summer time they are used to absorb perspiration and to apply before exposure to the hot rays of the sun to avoid sunburn. As an absorbent after night-sweats and during fevers, they are especially grateful. They are also applied to portions of the body, such as under the arms, to prevent or cure chafing.

Formulas for miscellaneous toilet powders are given under this heading; other formulas follow under distinctive headings.

I.

Talcum	av.oz. 13
Wheat starch.....	av.oz. 1½
Salicylic acid.....	dr. 3½

Reduce all to very fine powder, mix well, and pass through a fine sieve.

This is the Salicylated Powder of Talc of the Germ. Pharm. The corresponding preparation of the N. F. has boric acid instead of wheat starch.

II.

Talcum	av.oz. 16
Oil of rose.....	drops 10
Oil of wintergreen.....	drop 1
Essence of jasmine.....	dr. 3

Mix well and pass through a fine sieve.

III.

Precipitated chalk.....	av.oz. 16
Talcum	av.oz. 3
Orris root.....	av.oz. 1
Boric acid.....	av.oz. 1
Essence of cassie.....	fl.dr. 1
Essence of jasmine.....	fl.dr. 1
White rose extract.....	fl.dr. 1

The chalk should be the so-called English variety; the talcum, orris, and acid should be in very fine powder. The whole should be well mixed and then passed through a fine sieve.

IV.

Talcum	av.oz. 8
Corn starch.....	av.oz. 8
Oil of neroli.....	drops 30
Oil of ylang ylang.....	drops 30

Prepare like the preceding.

Synthetic oils may be used for this powder.

V.

Zinc oxid.....	av.oz. 4
Corn starch.....	av.oz. 4
Boric acid.....	av.oz. 4
Talcum	av.oz. 4
Oil of rose geranium.....	drops 10

All the solids should be in fine powder; the whole should be well mixed, and then passed through a fine sieve.

Borated Talcum Toilet Powder.

This consists mostly of powdered talcum with some powdered boric acid. The perfume is usually some form of rose but other kinds may be employed. The talcum used for these powders should be the finest and whitest grade obtainable, should be thoroughly mixed with the other ingredients, and should be passed through a very fine sieve.

VI.

Talcum	av.oz. 14½
Boric acid.....	av.oz. 1½
Carbolic acid.....	drops 50

The talc and boric acid should be in the finest possible powder, should be well mixed with the carbolic acid, and then should be sifted through a fine sieve.

VII.

Talcum	av.oz. 14
Boric acid.....	av.oz. 2
Oil of rose geranium.....	fl.dr. 2

Prepare like the preceding.

VIII.

Talcum	av.lb. 1
Magnesium carbonate.....	av.oz. 2
Borac acid.....	av.oz. 3¼

Prepare like No. I and perfume as desired.

IX.

Talcum	av.oz. 3
Boric acid.....	av.oz. 2
Zinc oleo-palmitate.....	av.oz. 1

Reduce all to very fine powder, mix well, and pass through a fine sieve.

The objection to this powder is that the zinc compound becomes rancid.

X.

Zinc oleate.....av.oz.	4
Boric acid.....av.oz.	4
Corn starch.....av.oz.	8
Oil of rose.....drops	10

The zinc oleate and boric acid must be in very fine powder and must be well mixed with the other ingredients. The whole must then be passed through a fine sieve.

This powder is liable to become rancid owing to decomposition of the zinc compound.

Oxygen Talcum Powder.

The active agent of the so-called "oxygen talcum powders" is sodium perborate, which on contact with moisture evolves oxygen. In its simplest form, an oxygen talcum powder may be made as follows:

XI.

Talcum	av.oz. 19
Sodium perborate.....av.oz.	1
Perfume, to suit.	

The talcum and perborate should be in very fine powder, should be well mixed with the perfume, and the mixture should be passed through a fine sieve.

Any of the other formulas for borated or violet talcum powders may be used, but the mixture should not contain more than about 5% of the perborate. In the case of the borated powders, the perborate should replace the boric acid to make an oxygen powder.

Violet Talcum Powder.

Any of the borated talcum powders may be converted into a violet talcum powder by substituting powdered orris root for the boric acid and scenting the mixture with violet perfume in some form such as ionone solution, essence of violet, or violet extract. Or the mixture, or violet essences, etc., used to make violet extract may be used for perfuming the powder.

XII.

The following contains both orris and boric acid:

Talcum	av.oz. 9
Boric acid.....av.oz.	2
Orris root.....av.oz.	1

Mix all in fine powder and pass through a fine sieve. Violet extract or ionone may be added.

Poudre de Vicomtesse.

XIII. Mme. Qui Vive's formula:

Talcum, powder.....av.oz.	12
Starch, finest.....av.oz.	2
Orris root, powder.....av.oz.	2
Oil of orris.....drops	16

Violet Toilet Powder.

The following formulas are recommended for making so-called "violet toilet powder." Their resemblance in odor to violets is, however, not very marked. Orris root is present in all these powders which improves the odor.

XIV.

Wheat flour or corn starch.....av.oz.	24
Orris root, powder.....av.oz.	2
Oil of lemon.....drops	20
Oil of bergamot.....drops	20
Oil of neroli.....drops	10
Oil of bitter almond.....drops	1
Tincture of musk.....m.	30

Mix well and pass through a very fine sieve.

XV.

Corn starch.....av.oz.	16
Orris, powder.....av.oz.	1
Oil of rose.....drops	2
Oil of lavender flowers....drops	4
Oil of bergamot.....drops	15
Tincture of musk.....drops	15
Essence of violet.....drops	15

Prepare like the preceding.

Rice Toilet Powder.

The following formulas contain a small proportion of rice flour combined with other valuable ingredients. Any desired perfume may be added. The whole mixture should, as in all preceding cases, be in very fine powder and should be sifted through a very fine sieve.

XVI.

Rice flour.....av.oz.	4
Corn starch.....av.oz.	12
Perfume, to suit.	

XVII.

Talcum	av.oz. 1
Boric acid.....	av.oz. 2
Zinc oxid.....	av.oz. 3
Rice flour.....	av.oz. 8

Perfume, as desired.

Fuller's Earth Nursery and Anti-Chafe Powder.

XVIII.

Fuller's earth.....	av.oz. 10
Talcum	av.oz. 3
Corn starch.....	av.oz. 3

Perfume, if desired.

XIX.

Fuller's earth.....	av.oz. 6
Corn starch.....	av.oz. 6
Talcum	av.oz. 2
Boric acid, powder.....	av.oz. 1

LIP SALVES OR POMADES.

These are preparations for anointing the lips to cure or prevent "cracking." They consist usually of white or yellow wax, spermaceti, paraffin, cocoa butter, petrolatum, or lard mixed with an oil like olive or sweet almond, the whole being flavored, usually with oil of rose. Frequently they are tinted a rose color by means of carmine, alkannin, or alkanet root. The first mentioned must first be triturated to very fine powder before adding oil or fat, and during cooling the fatty mixture must be frequently stirred to prevent it from subsiding. Alkannin is easier to use because it dissolves in the fats. Alkanet colors the fatty mixture during a rather prolonged maceration assisted by heat. If a colored preparation is to be made, yellow wax should be substituted for white wax, wherever the latter is mentioned, owing to the better keeping qualities of the former. Camphor may be added to these preparations, also salicylic acid.

The preparations are usually known by such titles as "rose lip salve," "tulip salve," "lip pomade," "rose cerate," "lip ointment" and "coral lip salve."

Lip salve is dispensed in very small jars.

I.

White wax.....	av.oz. 1
Sweet almond oil.....	fl.oz. 2
Carmine	gr. 1
Oil of rose.....	drop 1

Melt the wax, add the sweet almond oil, triturate the carmine to very fine powder, mix intimately with the fats, and then incorporate the oil of rose.

This is the formula of the French Codex:

II.

White wax.....	av.oz. 1
Spermaceti	av.oz. 1
Liquid petrolatum.....	fl.dr. 6
Tincture of benzoin.....	fl.dr. 2
Alkanet root, bruised.....	dr 2
Oil of rose.....	drops 5

Melt the wax and spermaceti, add the liquid petrolatum and the root, macerate the latter with the melted fats for about one-half hour, strain, allow to cool somewhat, and incorporate the tincture and oil.

III.

Paraffin wax.....	av.oz. 2
White petrolatum.....	av.oz. 4
Alkanet root.....	dr. 1
Camphor	dr. 1
Menthol	dr. 1
Eucalyptol	m. 15
Oil of bitter almond.....	drops 4
Oil of clove.....	drops 2
Oil of cassia.....	drop 1

Digest the root in the melted paraffin and petrolatum, strain, add the other ingredients, stir well, and put into jars or boxes.

IV.

Cocoa butter.....	av.oz. 2
White wax.....	dr. 2

Mix by fusion and perfume to suit.

V.

Cold cream.....	av.oz. 4
Glycerin	fl.dr. 2
Tincture of benzoin.....	fl.dr. 1
Carmine	sufficient to color

Rub the carmine with the glycerin, and incorporate with the cold cream; then add the tincture of benzoin and rub the ointment until the alcohol of the tincture has evaporated.

VI.

Carmine, fine powder.....gr. 5
Glycerinfl.dr. 2
Cold cream.....av.oz. 4

Rub the carmine with the glycerin and intimately mix with the cold cream. If not the shade to suit, more or less carmine may be used.

This and the preceding preparation may be entitled "rose lip cream."

APPLICATIONS FOR BLACK-HEADS OR COMEDONES.

Blackheads, or comedones, are due to the solidification of the natural fat within the sebaceous glands or ducts. The skin under these circumstances lacks expulsive energy to get rid of the thickened secretion. The application of very hot water and wool-fat soap often suffices to remove the trouble. To keep the skin in a healthy condition, bathing and washing must be freely practiced and must be stimulated by friction with crash or Turkish towels. Alkaline soaps should be avoided. Other treatments are given below.

I.

Before retiring bathe the parts affected with very hot water, dry well, then rub thoroughly with a lotion consisting of

Etherfl.oz. 1
Alcoholfl.dr. 6
Aromatic spirit of ammonia.fl.dr. 2

The object of this is to dissolve the sebaceous deposits. To further soften and loosen the same, a paste is applied, composed of

Acetic acid.....fl.oz. 1
Glycerinfl.oz. 1½
Kaolinav.oz. 2
Perfumeto suit

This paste is removed by washing the face on the following morning. After a few days the comedones can be easily expressed, if necessary, with the aid of a watch key.

Friction with a Turkish towel, the use of soap containing tar, resorcin or ichthyol rubbing with resorcin solution in spirit of ether, etc., constitute a good after treatment.

II.

Dr. Unna's usual treatment consists of applications of the following at night, to be washed off the following morning:

Acetic acid.....fl.dr. 2
Petrolatumav.oz. 2
Wool-fat, anhydrous.....av.oz. 2
Hydrogen peroxid.....fl.oz. 2

The acetic acid is sometimes omitted and the hydrogen peroxid increased to 4 fluidounces.

III.

Unna also recommends the following:

Ichthyolav.oz. 2
Pea flour.....dr. 6
Wool-fat, hydrous.....dr. 3
Sweet almond oil.....dr. 3
Waterfl.dr. 3
Mercuric chlorid.....gr. 2

Dissolve the mercuric chlorid with the water and incorporate this solution with the other ingredients. The pea flour is added to give consistency to the mixture and may be replaced by wheat flour.

IV.

Dr. Ohman-Dumesnil advises this treatment:

Force out the contents with an extractor (a small watch key will answer) every day, then apply hot water, followed by the following ointment:

Sulphur, washed.....dr. ½ to 1
Oleate of mercury.....gr. 30
Cold cream.....av.oz. 1

Apply this at night.

If used after the hot water application, the following ointment, thoroughly rubbed in, will be found efficient:

Resorcingr. 12
Cold cream.....av.oz. 1

Apply at night also.

When the comedones are small but in great numbers, the following is a good application:

Acetic acid, diluted.....fl.oz. 1
Glycerinfl.oz. 2
Kaolinav.oz. 3

Apply at night also.

Hot water here means water from 110° to 120° F.

V.

Dr. McCassey's treatment:

Ammonium carbonate.....	dr. 1
Water	fl.oz. 3
Ether	fl.oz. 3

Apply several times daily.

This mixture is much improved pharmaceutically by dissolving the ammonium carbonate, adding 3 fluidounces of alcohol, and then mixing with the ether.

VI.

Mme. Qui Vive's sulfur paste for blackheads is as follows:

Potassium carbonate.....	av.oz. 1¼
Precipitated sulfur.....	av.oz. 1¼
Water	fl.dr. 3
Alcohol	fl.oz. 1
Glycerin	fl.oz. 1
Ether	fl.dr. 13

Apply at night and bathe the face the next morning.

FRECKLE AND MOTH REMOVERS.

Freckles consist of deposits of pigment in the skin. There are two kinds of freckles, one caused by exposure to the sun and heat of summertime and is therefore akin to tan or sunburn; this kind is called "summer freckles." This kind may fade away by itself and is easily removed by applications. The other is a permanent pigmentation of the skin, the true freckle, also called "cold or winter freckle."

"Summer freckles" may be removed by the same remedies as are recommended for sunburn, while true freckles require more active agents. Most of the preparations recommended for freckles have as a base some agent of an escharotic action like citric acid (or lemon juice) or a mercurial salt like mercuric chlorid or ammoniated mercury (white precipitate), the former being usually recommended, the latter more safe. These agents destroy and remove the outside old skin, mercuric chlorid acting most quickly but also most dangerously. Another agent recommended is zinc sulfocarbolate. Lastly hydrogen peroxid is suggested and

probably sodium perborate would prove useful.

The same applications are used to eradicate moths.

Most of the formulas mentioned below are highly recommended for the purpose, in many cases having received the approval of medical authority.

I.

Borax	dr. 5
Potassium chlorate.....	dr. 5
Alcohol	fl.oz. 1
Glycerin	fl.oz. 2
Rose water, to make.....	fl.oz. 16

Dissolve the two salts in the liquids and filter.

This is to be applied with a soft sponge several times a day. It forms a mild harmless lotion and frequently answers completely in mild cases. The same remarks apply to the next preparation.

II.

Sodium sulfocarbolate.....	gr. 50
Glycerin	fl.oz. 2
Rose water.....	fl.oz. 1
Alcohol	fl.oz. 1

For directions, see No. I.

III.

Salicylic acid.....	gr. 60
Bay rum.....	fl.oz. 4

This is to be applied night and morning with a soft cloth or sponge.

This lotion soon produces a slight roughness of the skin, which should be subdued by the use of glycerite of starch or any toilet cream or jelly. Care must be taken not to get any of it too near the eyes, nostrils and lips. Should the skin become red and irritated, the lotion must be suspended for a few days to allow the inflammation to subside.

IV.

Mercuric chlorid.....	gr. 5
Hydrochloric acid.....	m. 100
Bitter almonds.....	dr. 5
Glycerin	fl.dr. 3
Tincture of benzoin.....	fl.dr. 1
Orange flower water, to make	fl.oz. 8

Blanch the almonds and, in the usual manner for making seed emulsions, pre-

pare 6½ fluidounces of emulsion, and to this add the tincture and glycerin. Also dissolve the mercuric chlorid in 1 fluidounce of water, add the acid, and incorporate this solution with the emulsion.

This liquid is to be applied once a day with a sponge or soft cloth.

V.

Ointment of ammoniated
mercuryav.oz. 3½
Bismuth subnitrate.....dr. 3

This is to be applied night and morning. It is not as harsh to the skin as a mercury bichlorid preparation.

VI.

This is similar to the preceding:

Ammoniated mercury.....dr. 1
Bismuth subnitrate.....dr. 1
Cold cream.....av.oz. 4

Apply at night.

VII.

Chloral hydrate.....dr. 3
Carbolic acid.....m. 90
Tincture of iodine.....gr. 90
Glycerinfl.oz. 1½

This is to be applied at night with a small brush.

VIII.

Wool-fat, hydrous.....av.oz. 1
Sweet almond oil.....fl.oz. 1
Precipitated sulfur.....av.oz. 1
Zinc oxid.....dr. 4
Perfume, to suit.

Apply this ointment to the face at night, wash it off in the morning, and apply the following lotion several times during the day:

Solution of potassa.....fl.dr. 4
Distilled water, to make...fl.oz. 10

IX.

Hydrogen peroxid.....fl.oz. 2
Waterfl.oz. 2
Distilled extract of witch
hazelfl.oz. 4

This is to be applied several times a day.

Rose or orange flower water may be used in place of the water and witch hazel.

X.

Gowland's Cosmetic Lotion, see, is also used for freckles.

Most of the remedies recommended for "tan" may also be used against "summer freckles."

REMEDIES FOR PIMPLES OR ACNE.

Like "blackheads," pimples is a disease of the sebaceous glands, and is characterized by an eruption which usually appears on the face but may occur on the back, shoulders and chest. The cause may be local, such as lack of perfect cleanliness, the use of strong alkaline soaps, but the affection is usually the result of constitutional disturbance and manifests itself mostly during the periods of puberty and adolescence. The most common cause is some form of indigestion and the main reliance for cure should be upon dieting. Greasy foods, sweet stuffs, such as pie, cake, candy, etc., hot bread and biscuits, cheese, highly seasoned foods, etc., should be avoided.

Internal medication with the view of exercising a direct effect upon the disease consists in the use of calcium sulfid and of arsenic, ichthyol also have been recommended. Calcium sulfid is given in doses of ¼ grain 3 or 4 times a day, arsenic in doses of 1/20 grain 3 times a day, and ichthyol 5 to 8 grains 3 times a day.

Local treatment should consist, first and foremost, of the frequent use of very hot water and good toilet soap. In mild forms this may be sufficient. In severer forms, tincture of green soap should be used to cleanse the skin. Generally, however, more energetic treatment is required. The formulas mentioned below are all highly recommended for the purpose.

I.

Mercuric iodidgr. 3
Potassium iodidgr. 20
Sodium bicarbonategr. 20
Aromatic spirit of ammonia..m. 30
Bay rumfl.oz. 1
Camphor water, to make...fl.oz. 4

Apply once or twice a day with a sponge or soft cloth.

II.

Zinc sulfatedr. 1 to 4
 Potassium sulfuretdr. 1 to 4
 Precipitated sulfurdr. 1 to 4
 Rose waterfl.oz. 4

Dissolve the zinc sulfate and potassium sulfuret separately in half the rose water, then mix the solutions, and rub up with the sulfur.

This lotion should be applied frequently. It is best to begin with a weaker preparation, gradually making it stronger so as not to produce irritation of the skin. If there is any irritation, some toilet cream or emollient should be applied for a day or two.

III.

Ichthyolav.oz. $\frac{1}{2}$
 Zinc oxidav.oz. 1
 Starchav.oz. 1
 Petrolatumav.oz. $1\frac{1}{2}$

Thoroughly steam the face at night or wash it in water as hot as can be borne. All pustules and "blackheads" should be opened and emptied with as little violence as possible. After careful drying of the face, the above paste should be thoroughly rubbed into the affected spots. In the morning bathe the face with a bland soap and cool water, drying with little friction.

IV. This is Unna's' paste for pimples:

Resorcinav.oz. $\frac{1}{2}$
 Zinc oxidav.oz. 1
 Starchav.oz. 1
 Petrolatumav.oz. 2

APPLICATIONS FOR TAN OR SUNBURN.

"Tan" is a darkening of the skin due to exposure to the sun. When the exposure is of such a nature as to cause pain or smarting and peeling of the skin, the result is properly called "sunburn." An excellent remedy to allay the smarting of sunburn is lead water. Other soothing and healing remedies for sunburn are any of the cold creams, toilet creams or jellies, creams containing almonds, camphor ice, skin emollients or toilet tablets. To bleach a tanned skin, any of the preparations recommended

for freckles may be used, also the preparations enumerated under the heading Face or Skin Bleaches or Whiteners, also Gowland's Cosmetic Lotion. The preparations mentioned below emanate mostly from good authority.

I. Under the name Albadermine has been devised a foreign process for the removal of tan, sunburn, and summer freckles which requires the use of two solutions:

Solution A.

Potassium iodiddr. 2
 Iodingr. 6
 Glycerinfl.dr. 3
 Infusion of rose.....fl.oz. 4

Dissolve the potassium iodid in a small quantity of the infusion and one fluidram of the glycerin; with this fluid moisten the iodine in a glass mortar and rub it down, gradually adding more liquid until complete solution has been obtained; then stir in the remainder of the ingredients, and bottle the mixture.

Solution B.

Sodium hyposulfitedr. 4
 Rose waterfl.oz. 16
 Dissolve and filter.

With a small camel's hair pencil or piece of fine sponge apply a little of "A" to the tanned or freckled surface, until a slight but tolerably uniform brownish-yellow skin has been produced. At the expiration of fifteen or twenty minutes moisten a piece of cambric, lint or soft rag with "B" and lay it upon the affected part, removing, squeezing away the liquid, soaking it afresh, and again applying until the iodine stain has disappeared. Repeat the entire process three times daily, but diminish the frequency of the application if tenderness be produced. In the course of from three or four days to as many weeks the discoloration will either have disappeared entirely, or its intensity will be very greatly diminished. "Summer freckles" are said to yield readily to this treatment.

II.

Borax, powderdr. 4
 Zinc oxiddr. 4
 Glycerinfl.oz. 2

Bay rumfl.oz. 2
 Distilled waterfl.oz. 7½
 Dissolve the borax in the water and
 add the other ingredients.

Apply freely 5 or 6 times a day.

III.

Hydroquinonegr. 100
 Glacial phosphoric acid....gr. 60
 Glycerinfl.oz. 1
 Water, to make.....fl.oz. 8

Apply twice daily, first washing and
 drying the skin carefully.

FOR MOTH OR LIVER PATCHES.

The cause of these pigmentations of
 the skin is unknown but they are ascribed
 by the laity to affections of the liver,
 whence the name. The preparations
 recommended for freckles and for tan
 will also be useful for moth patches, es-
 pecially the preparation known as "alba-
 dermine." The following is also rec-
 ommended:

Zinc oxiddr. 3
 Magnesium carbonatedr. 3
 Kaolindr. 6
 Glycerindr. 6
 Wool-fat, hydrousav.oz. 2

Apply to the discolored spot as often
 as convenient.

WRINKLE CREAM.

The following is offered by a beauty
 expert under the above name:

White waxav.oz. 2
 Spermacetiav.oz. 2½
 Wool-fat, hydrousav.oz. 7
 Sweet almond oil.....fl.oz. 16
 Rose waterfl.oz. 12
 Borax, powdergr. 80

Of course this is only a "cold cream"
 and any other preparation of the same
 kind containing wool-fat may be used
 for the same purpose. See also the fatty
 massage creams and skin foods.

WRINKLE LOTIONS.

Washes for preventing the formation
 of wrinkles are usually of an astringent
 nature. They ward off the wrinkles but
 they close the pores of the skin and
 eventually impart to the latter a dead-
 ened appearance. The following are
 used:

I.

Tannic aciddr. 1
 Alcoholfl.dr. 1
 Glycerinfl.dr. 2
 Waterfl.oz. 4
 Apply this 3 times a day.

II.

Alumdr. 1
 Glycerinfl.dr. 4
 Water, to make.....fl.oz. 8
 Use like the preceding.

III. It is said that there is nothing
 better for the skin than wool-fat and if
 used daily it unquestionably keeps the
 skin soft. Or any of the "cold creams"
 or any other toilet preparation contain-
 ing wool-fat may be used. The follow-
 ing is also a good lotion for this pur-
 pose:

White castile soap.....dr. 2½
 Boraxdr. 1½
 Cocoonut oildr. 3
 Wool-fat, hydrousav.oz. 1
 Waterfl.oz. 1
 Rose waterfl.oz. 10

Rub the soap and borax, both in fine
 powder, with the oil, fat and water un-
 til thoroughly mixed, then gradually in-
 corporate the rose water, which has pre-
 viously been warmed.

ASTRINGENT WASH, Mme. Qui Vive's.

Cucumber juicefl.oz. 3
 Cologne waterfl.oz. 2
 Tincture of benzoin.....fl.oz. 1
 Elder flower water, to make.fl.oz. 16

This is recommended for coarse pores
 and oily or flabby skin. It is to be ap-
 plied with a soft sponge night and
 morning.

LOTION FOR SWEATY HANDS.

When the hands sweat inordinately so
 as to interfere with work, the following
 applications may be used:

I.

Boric aciddr. 2
 Boraxdr. 3
 Salicylic aciddr. 3
 Glycerinfl.oz. 3
 Bay rumfl.oz. 3

Apply to the hands 3 times a day.

II.

Boric acid	dr. 1½
Borax	av.oz. ½
Salicylic acid	av.oz. ½
Glycerin	fl.oz. 3
Alcohol	fl.oz. 3

Use like the preceding.

FOR RED HANDS.

Liebreich recommended the following preparations:

I.

Wool-fat, hydrous	av.oz. 1
Vanillin	gr. 6
Oil of rose.....	drops 4

II.

Wool-fat, hydrous	dr. 2
Liquid paraffin	dr. 5½
Vanillin	gr. 2
Oil of rose.....	drop 1

These preparations are to be used frequently. They coat the skin with a thin layer of fat which prevents fissuring of the cuticle.

FOR "COLD SORES."

These are a cluster of vesicles which occur at the corners of the mouth or the borders of the lips. There is redness, swelling, and a sense of tingling and burning. Various substances recommended are glycerite of tannin, zinc ointment, and preparations containing camphor, such as camphor ice. Lassar's paste is also excellent. A coating of flexible collodion protects the parts and relieves the symptoms. The following dusting powder is good:

Boric acid	gr. 15
Acetanilid	gr. 15
Starch	dr. 4

"Cold sores" are said to disappear after a mild cathartic taken for 2 or 3 days.

WART ERADICATORS.

Pharmacists are frequently called upon to recommend or offer some remedy for the eradication of the peculiar excrescences known as warts. These are peculiar in that sometimes a very simple remedy applied but once or twice will cause them to disappear and at other times they persist indefinitely in spite of all treatment.

Every one is probably familiar with the application of silver nitrate in sticks, concentrated nitric acid, creosote, carbolic acid, or salicylic acid in any of the forms of corn cures. Glacial acetic and dichloroacetic acid are frequently employed, while some add salicylic acid in the proportion of 1 in 16 to concentrated acetic acid. Another escharotic solution consists of chromic acid 1 part, water 5 parts. Unna recommends mercurial plaster containing 5% of arsenic. It is also recommended to shave off the wart to the quick and then to apply a compress wet with a saturated solution of ammonium chlorid. A corrosive collodion for warts consists of 1 part of mercuric chlorid dissolved in 20 parts of collodion. Other applications are: Concentrated hydrochloric acid, solution of antimony chlorid, solution of mercuric nitrate, potassium bichromate, arsenic oleate, copper oleate, and formaldehyde. Castor oil and oil of cinnamon are also useful. All of these remedies must be applied once or twice daily until the wart disappears. The outer hard, thick layer of cuticle should always be removed before applying anything whatever.

An ointment sometimes recommended is the following:

Verdigris	gr. 50
Savin, powder	gr. 50
Soap cerate	av.oz. 1

The following powder is said to be very effective:

Calomel	gr. 30
Boric acid	gr. 15
Salicylic acid	gr. 5
Cinnabar	gr. 3

Rub into the wart 2 or 3 times a day.

Or use the following:

Mercuric chlorid	gr. 5
Salicylic acid	dr. 1
Collodion	fl.oz. 1

In the case of multiple warts, where a large number appear within a short time, there is some constitutional derangement, and the patients are usually advised to take Fowler's solution in very small doses, or magnesium sulfate in 5

gr. doses 3 times daily. The following application has been recommended:

Sublimed sulfur	dr. 2
Glycerin	fl.dr. 5
Acetic acid	fl.dr. 1

Apply repeatedly to each wart, continuing the treatment for several days. The warts dry up and then drop off.

A medical journal recommends the following:

When warts persist it is well to give about 8 grains of magnesium sulfate each night; and a local application of

Chloral hydrate	dr. 1½
Salicylic acid	dr. 1
Acetic acid	fl.dr. 1½
Ether	fl.dr. 1½
Collodion	fl.dr. 4

Paint on the warty growths once daily.

Children's warts, appearing principally on the hands, may be removed by applying during several days solution of soda or potassa, and then covering them with collodion containing tannin. The same treatment applies for common warts.

Erasmus Wilson considers the application of caustic potassa in stick form to be the quickest and most reliable eradicator, one treatment being all that is usually required.

Warts appearing on the skin of elderly persons must be looked upon as suspicious (cancer) and should be shown to a reliable surgeon.

MISCELLANEOUS COSMETIC PREPARATIONS.

Under this heading are grouped a number of preparations which are demanded occasionally and cannot appropriately be classed under any other heading.

Kummerfeld's Cosmetic Water.

Sublimed sulfur	gr. 45
Glycerin	fl.oz. 1
Spirit of camphor.....	fl.dr. 3
Spirit of lavender.....	fl.dr. 3
Cologne water	fl.oz. 1
Distilled water	fl.oz. 12

This is used as an application for a blotched skin.

Lily Water.

A.—Eau de Lys de Lohse.

This was found to consist of

Zinc oxid	g. 2
Talcum	g. 2
Glycerin	g. 4
Rose water	g. 200

B.—Eau de Lys de Paris.

This was found to consist of

Bismuth subnitrate	g. 35
Rose water	g. 300

Hebra's Cosmetic Liniment.

Precipitated sulfur	av.oz. 2
Potassium carbonate	av.oz. 2
Glycerin	fl.oz. 1½
Ether	fl.oz. 2½
Diluted alcohol	fl.oz. 2

This is recommended for "blackheads" and for eruptions of the skin.

Lilionese.

Borax	dr. 3
Potassium carbonate	gr. 45
Talcum	av.oz. 1¼
Cologne water	fl.oz. 1½
Rose water	fl.oz. 4
Orange flower water.....	fl.oz. 4

This is recommended for pimples, "blackheads," etc.

CHAPTER III.

PREPARATIONS FOR THE HAIR, SCALP, MUSTACHE AND BEARD.

LIQUID SOAPS.

These are solutions of soap in a mixture of water and alcohol and are generally prepared by direct combination of fixed oil or oleic acid with alkali in the presence of water and alcohol, the latter facilitating combination. Excess of alkali is necessary but great excess should be avoided. These preparations are used for cleansing the skin for cosmetic and surgical purposes. If used for cleansing the skin prior to performing surgical operations they may contain ether or various antiseptics may be added such as carbolic acid or a cresol solution.

For cosmetic purposes they may be scented with different volatile oils or synthetic perfumes, or rose or orange flower water may be substituted for a

portion or all of the water. Distilled water should be used instead of ordinary hydrant water as the latter usually contains various salts, particularly calcium, which will unite with the oil or oleic acid form insoluble oleates.

These preparations may remain uncolored or they may be tinted reddish with tincture of cudbear or green with alcoholic solution of chlorophyll.

The soda and potassa (sodium and potassium hydrate or hydroxid) used in these preparations should be of the strength required by the U. S. P.; if not, proportionately more must be used.

I. Wilbert's formula:

Cottonseed oil.....	f.oz. 12
Sodium hydrate.....	av.oz. 1
Potassium hydrate.....	av.oz. 1
Alcohol	f.oz. 6
Distilled water, to make....	f.oz. 60

In a suitable container, preferably a glass-stoppered bottle, dissolve the potassium and sodium hydrates in 6 fluid-ounces of distilled water, add the alcohol, and then add the oil in three or four portions, shaking vigorously after each addition. Continue to agitate the mixture occasionally until saponification is completed. Then add the remainder of the water.

The two hydrates must be of the strength demanded by the U. S. P. or proportionately more must be used. Distilled water should be used as ordinary water contains salts of various kinds. The product may be medicated if desired, or it may be perfumed with volatile oils or synthetic perfumes or orange flower or rose water may be used instead of distilled water.

II. Stanislaus' formula:

Soft soap	av.oz. 22½
Alcohol	f.oz. 9½
Tincture of cudbear.....	f.oz. 1
Oil of orange.....	f.dr. 4
Oil of lavender flowers.....	f.dr. 4
Oil of bergamot.....	f.dr. 4
Oil of cinnamon.....	f.dr. 4
Water, to make.....	f.oz. 64

Mix in the order given here, agitate occasionally until the soap is dissolved,

and filter if necessary. The tincture of cudbear may be omitted or it may be replaced with chlorophyll. Other volatile oils or synthetic perfumes may be used. The soft soap for this preparation should be made as follows:

Linseed oil, raw.....	av.oz. 15
Solution of potassium hydroxid, U. S. P.....	av.oz. 3, gr. 20
Alcohol	f.oz. 6
Distilled water.....	f.oz. 7½

Mix in a half-gallon wide-mouthed bottle, adding the solution to the oil, and then incorporating the alcohol and water. Shake frequently during 24 hours until the oil is saponified.

III.

Cottonseed oil.....	f.oz. 20
Sodium hydrate.....	av.oz. 3
Potassium carbonate.....	dr. 5
Alcohol	f.oz. 20
Distilled water.....	f.oz. 22

Dissolve the sodium hydrate in half the water, add the oil and 15 fluid-ounces, agitate frequently until the oil is saponified, then add the alcohol and the potassium carbonate dissolved in the remainder of the water.

IV.

Oleic acid, commercial....	f.oz. 14
Solution of potassium hydrate in water (1 in 1),.....	sufficient
Alcohol	f.oz. 6
Oil of lavender flowers....	f.dr. 1
Distilled water, to make....	f.oz. 60

Mix the acid and alcohol and neutralize with the potassa solution of which about 3 fluidounces will be required, using phenolphthalein as the indicator. Then allow the liquid to become cool, add the oil and enough water to make 60 fluidounces.

V.

Olive or benne oil.....	f.oz. 24
Potassium hydrate.....	av.oz. 6
Alcohol	f.oz. 1½
Water	sufficient

Dissolve the potassium hydrate in an equal quantity of water; mix this solution with the oil and alcohol, and agitate frequently until the oil is saponified, then dilute with an equal quantity of water.

VI.

Cocoonut oil.....av. or fl.oz.	16
Oleic acid, pure.....fl.oz.	8
Potashav.oz.	8
Potassium carbonate.....dr.	5
Waterfl.oz.	24
Alcoholfl.oz.	16

Mix all, agitate frequently until the oil and acid are saponified, then decant from any undissolved potash.

The potash may be caustic potassa or any good commercial grade of potash or lye. The excess will remain at the bottom of the bottle and the soap may be decanted.

Liquid Glycerin Soap.

Any of the previously mentioned liquid soaps, if made from fixed oil, contain some glycerin, but by a liquid glycerin soap is usually understood a liquid soap containing a fairly large proportion of glycerin. Any of the above liquid soaps may be converted into a glycerin soap by replacing a portion of the water with glycerin. The proportion of the latter may be varied to suit different ideas or requirements.

Liquid Tar Soap.

This may be prepared by adding oil of tar to the finished soap instead of perfume, in the proportion of about an ounce or two to the gallon or pine tar itself may be added to the fixed oil before saponification.

SHAMPOO LIQUIDS.

These are preparations used as applications to the head for the purpose of removing dust, dirt, dandruff, etc., from the hair and scalp. They should be applied freely and rubbed in thoroughly until a copious lather is formed which is to be removed with running water. Any of the previously mentioned liquid soaps may be used as shampoos or any of the preparations mentioned below.

The Sea Foam Liquids which follow are somewhat different from these shampoo liquids.

I.

Potassium carbonate.....av.oz.	1
Boraxav.oz.	1
Waterfl.oz.	32
Mix and dissolve.	

II.

Soft or green soap.....av.oz.	1½
Potassium carbonate.....av.oz.	2½
Alcoholfl.oz.	4
Waterfl.oz.	26

Dissolve the soap and potassium carbonate in the water and add the alcohol.

III.

White castile soap.....av.oz.	1
Potassium carbonate.....dr.	1
Boraxdr.	2
Cologne water.....fl.oz.	2
Bay rum.....fl.oz.	2
Water, to make.....fl.oz.	32

Dissolve the soap in the water by the aid of heat, occasionally replacing water lost by evaporation, in the solution dissolve the borax and potassium carbonate, then add the cologne water and bay rum, and filter.

Egg Shampoo Liquids.

IV.

Yolk of 4 eggs.	
Spirit of soap, N. F.....fl.oz.	3½
Ammonia water.....fl.dr.	3
Oil of lemon.....m.	45
Oil of rose geranium.....m.	15
Waterfl.oz.	27

Beat the egg-yolk, mix thoroughly with the other ingredients by agitation, and strain.

V.

Fresh eggs.....	3
Spirit of soap, N. F.....fl.oz.	1½
Potassium carbonate.....dr.	2½
Ammonia water.....fl.dr.	3
Oil of rose.....drops	2
Oil of bergamot.....drops	2
Oil of rose geranium.....drop	1
Oil of bitter almond.....drop	1
Rose water.....fl.oz.	27

Thoroughly beat the eggs, dilute with the rose water, add the other ingredients, mix intimately by agitation, and strain.

VI.

Whites of 3 eggs.	
Boraxav.oz.	3

Glycerin	f.oz. 1
Bay rum	f.oz. 16
Water	f.oz. 16

Beat the egg-yolk thoroughly, incorporate with a portion of the water, dissolve the borax in the remainder of the water, mix all the ingredients, and strain.

Tar Shampoo Liquid.

Add oil of tar to any of the preceding shampoo liquids or use one of the following:

VII.

Green or soft soap.....	av.oz. 12
Potassium carbonate.....	av.oz. 2
Oil of tar.....	f.dr. 2
Alcohol	f.oz. 16
Water, to make.....	f.oz. 64

Mix all and dissolve, let stand a few days, and filter.

VIII.

Pine tar	av.oz. 2½
Linseed oil, raw.....	f.oz. 27
Caustic potash.....	av.oz. 6
Alcohol	f.oz. 3
Water	f.oz. 30

Heat the tar and oil to 60° C., dissolve the potash in the water, mix with the alcohol, and add this solution gradually to the oil and tar mixture, stirring constantly meanwhile. Continue the heat until the oil and tar are thoroughly saponified, then add water to make one-half gallon of liquid.

Tonic Shampoo Liquid.

The following may be put up under this name:

IX.

Tincture of quillaja.....	f.oz. 10
Cologne water.....	f.oz. 4
Glycerin	f.oz. 3
Fluid extract of jaborandi..	f.dr. 4
Quinine sulfate.....	gr. 30
Orange flower water, to make	f.oz. 32

Dissolve the quinine in the cologne water and tincture of quillaja, add the remaining ingredients, and filter if necessary.

SEA FOAM LIQUIDS. (Dry Shampoos.)

The difference between these and the preceding class of preparations is not

a well defined one, and in fact, the difference is largely in the matter of application or use, the shampoos being employed in liberal quantities and rubbed in vigorously to produce a copious lather, which will then require a large amount of water for removal. In the case of sea foams, or dry shampoos, a more or less volatile alkali, ammonia, for example, usually forms the principal ingredient, which foams but slightly, and the hair may be cleansed by rubbing with a wet towel.

These liquids may be colored yellow with tincture of curcuma, red with tincture of cudbear, or green with alcoholic solution of chlorophyll. They may be perfumed in any desired manner.

I.

Cocoanut oil soap of good quality	av.oz. 4
Potassium carbonate.....	av.oz. 2
Oil of bay.....	f.dr. 1
Tincture of curcuma.....	f.dr. 1
Alcohol	f.oz. 32
Water, to make.....	f.oz. 64

By the aid of heat, dissolve the soap in enough water to make 16 fluidounces, add the potassium carbonate, stir till dissolved, allow to cool somewhat, add the alcohol, oil, and tincture, and finally filter.

The soap for this preparation may be made like the soft soap of the U. S. P., substituting cocoanut oil for the linseed oil of the latter.

Any other perfume or coloring agent may be used.

II.

Castor oil.....	f.oz. 1
Ammonia water.....	f.oz. 1
Ammonium carbonate.....	av.oz. 1
Alcohol	f.oz. 32
Water, to make.....	f.oz. 64

Dissolve the oil in the alcohol, add the ammonia water, then the ammonium carbonate dissolved in the water, and agitate thoroughly. Color and perfume in any desired manner.

III.

Potassium carbonate.....	dr. 4
Ammonia water.....	f.dr. 10

Tincture of cantharides....	f.dr.	5
Bay rum	f.oz.	20
Alcohol	f.oz.	20
Water	f.oz.	20

Dissolve the potassium carbonate in the water, and add the other ingredients.

IV.

Potassium carbonate.....	av.oz.	1½
Ammonium carbonate.....	dr.	2½
Borax	av.oz.	1½
Spirit of soap, N. F.....	f.oz.	1
Bay rum.....	f.oz.	6
Distilled water, to make..	f.oz.	60

Dissolve the two carbonates and borax in the water, and add the other ingredients.

SHAMPOO PASTE, CREAM OR JELLY.

Many shampoo preparations are now put up in the form of pastes or jellies which are really soft soaps. Many of these are known by the name "egg shampoo," but some of these preparations do not contain any egg, but are merely a perfumed soap.

I.

Cocoanut oil	av.oz.	16
Potassium hydrate.....	av.oz.	2
Potassium carbonate.....	av.oz.	1
Oil of rose geranium.....	drops	10
Oil of bergamot.....	drops	30
Distilled water.....	sufficient	

Melt the cocoanut oil in a porcelain or enameled-iron dish, dissolve the caustic potash in 8 fluidounces of distilled water, and add gradually and with constant stirring to the hot oil, continuing the heat and stirring until saponification is complete. Discontinue the heat, to the warm soap add the potassium carbonate dissolved in 4 fluidounces of water, stir or beat until the paste is uniformly smooth, and finally incorporate the volatile oils. Other volatile oils or synthetic perfumes may be used.

II.

Olive oil.....	f.oz.	16
Potassium hydrate.....	av.oz.	4
Alcohol, water, each....	sufficient	

Dissolve the caustic potash in 8 fluidounces of water and warm the solution. Also warm the oil on a water bath, add the solution, and stir until saponification

is complete, meanwhile continuing the heat.

The caustic potash for this preparation should be of U. S. P. strength; if it is weaker, more of it must be used to cause saponification.

If a transparent preparation is desired, add 8 fluidounces of alcohol to the warm soap and continue heating without stirring.

The soap may be perfumed like No. I.

III.

White castile soap.....	av.oz.	16
Potassium carbonate.....	av.oz.	4
Glycerin	f.oz.	8
Oil of lavender flowers....	f.dr.	2
Oil of bergamot.....	m.	30
Water	sufficient	

Cut the soap into fine pieces and heat it with 2 pints of water on a water bath until thoroughly softened, then add the potassium carbonate, and continue the heat until the latter is dissolved. Occasionally add hot water to make up for that lost by evaporation. Then allow to cool somewhat, incorporate the oils, and then add enough water to reduce to a suitable creamy consistency.

Tar Shampoo Paste.

Nos. I or II may be converted into tar shampoo pastes by adding oil of tar to the fixed oil before saponification.

SHAMPOO POWDERS.

These are powdery mixtures which are used for washing the hair and scalp. They may be perfumed in any desired manner. They may be dispensed in small boxes or in envelopes, each one to be sufficient for one shampoo, or they may also be put up in 2 to 4-ounce perforated screw-cap jars.

I.

Granulated soap.....	av.oz.	2
Borax, powder.....	dr.	2
Potassium carbonate.....	dr.	1
Sodium bicarbonate.....	dr.	1
Oil of rosemary.....	drops	20

Mix well, divide into 20 powders, wrapping in waxed or paraffined paper.

One powder is sufficient for one shampoo.

The granulated soap is obtainable from soap manufacturers.

II.

Potassium carbonate.....av.oz.	1
Borax, powder.....av.oz.	1
White castile soap, powder..dr.	2
Oil of rose geranium.....drops	10

III.

Borax	av.oz. 1
Sodium carbonate, dried.....av.oz.	2
Quillaja, fine powder.....av.oz.	1

IV.

Borax	av.oz. 6
Sodium carbonate, dried.....av.oz.	4
Oil of rosemary.....drops	40

2 av. ounces of powdered soap may be added to this.

HAIR-DRYING POWDER.

To dry the hair after washing and to remove oil it is customary to dust the hair with powdered orris root or various mixtures containing orris root which may be applied with a powder puff. The powder may be allowed to remain 10 or 15 minutes or, better, over night, and then brushed out thoroughly. The following are good formulas for these powders:

I.

Orris root.
White corn meal, equal parts of each.
Both should be in fine powder.

II.

Orris root.....av.oz.	2
Talcum	av.oz. 3
Starch	av.oz. 5
Tincture of musk.....m.	20
Oil of lemon.....drops	15
Oil of bergamot.....drops	15
Oil of neroli.....drops	6

The first three ingredients should be in fine powder, and all ingredients should be well mixed.

III.

Wheat flour.....av.oz.	8
Orris root, powder.....av.oz.	1

Heat the flour without scorching until perfectly dry, then mix intimately with the orris.

HAIR OILS. (Huiles Philocome.)

Hair oil may be prepared from any of the bland, fixed, non-drying oils such as olive, mustard, benne, rapeseed or peanut oil, also from liquid petrolatum (paraffin oil), or from a mixture of castor oil and alcohol. These mixtures must be rendered pleasantly odorous by the addition of suitable perfume. See under Perfumes for Hair Oils and Pomades for different combinations of oils suitable for perfuming these oils.

Frequently hair oil is colored red by the use of alkanet root or its coloring constituent, alkannin. It may also be colored yellow by means of curcuma or brownish with annatto.

Hair oil in its usual yellow condition is frequently dispensed under the name "bear's oil"; if colored red it is often known as "rose oil."

Any of the preparations mentioned below may be colored as described above or they may be left uncolored. They may also be perfumed in any desired manner.

Hair Oil Containing Castor Oil and Alcohol.

I.

Castor oil.....fl.oz.	4
Alcohol	fl.oz. 26
Tincture of cantharides....fl.oz.	2
Oil of lavender flowers....fl.dr.	1
Oil of rosemary.....fl.dr.	1
Oil of clove.....fl.dr.	2
Oil of bergamot.....fl.dr.	4
Alkanet root, powder.....dr.	2

Mix the oils in a bottle; put the alkanet root on a filter or pack in a funnel and percolate the alcohol through it; mix this percolate with the oily mixture, and add the cantharides tincture.

The alkanet may be omitted.

II.

Castor oil.....fl.oz.	16
Alcohol	fl.oz. 16
Oil of nutmeg.....drops	30
Oil of rose.....drops	20
Oil of rosemary.....drops	10
Oil of neroli.....drops	10
Tincture of musk.....fl.dr.	1
Alkanet	sufficient

Prepare like No. I.

The alkanet may be omitted.

Hair Oil Containing Paraffin Oil.**III.**

Paraffin oil.....	f.oz. 32
Alkanet root.....	av.oz. 1½
Oil of bergamot.....	f.dr. 1
Oil of clove.....	drops 15
Oil of rose.....	drops 2

Digest the paraffin oil with the alkanet root, strain, and add the volatile oils.

IV.

Paraffin oil.....	f.oz. 16
Cottonseed oil.....	f.oz. 8
Oil of nutmeg.....	drops 30
Olive of clove.....	drops 15
Oil of cassia.....	drops 10

Benzoated Hair Oil.

The benzoated oil for these hair oils may be made as follows:

Benzoin	av.oz. 4
Alcohol	f.oz. 8
Castor oil.....	f.oz. 4'

Reduce the benzoin to coarse powder, macerate with the alcohol for a week or so, agitating frequently, then filter, to the filtrate add the oil, and by means of a water bath evaporate the alcohol. Each fluidounce of oil represents one ounce of benzoin.

V.

Cottonseed oil.....	f.oz. 15
Benzoated oil.....	f.dr. 4
Oil of bergamot.....	f.dr. 1
Oil of lavender flowers.....	m. 30
Oil of clove.....	drops 10

VI.

Expressed oil of mustard seed	f.oz. 15
Benzoated oil.....	f.dr. 4
Oil of lemon.....	m. 30
Oil of cinnamon.....	drops 15
Oil of clove.....	drops 15
Oil of rose geranium.....	drops 5

Burdock Root Hair Oil. (Klettenwurzel Haar Oel.)

The following makes a preparation containing burdock root:

VII.

Olive or benne oil.....	f.oz. 32
Burdock root, fresh.....	av.oz. 4
Castor oil.....	f.oz. 2
Oil of bergamot.....	f.dr. 2
Oil of rose geranium.....	f.dr. 1
Alkannin or alkanet root.....	sufficient

Digest the olive oil or benne oil with the burdock root for about one-half hour at a moderate heat, then decant the clear liquid, add the other oils and color, if desired, with alkannin. Alkanet may be employed instead of the latter and may then be added to the burdock root during digestion.

Some of the so-called "burdock root hair oils" do not contain any burdock root.

Macassar Oil.

True macassar oil is a fixed oil derived from the seeds of an East Indian plant, but this is a very scarce article and probably valueless as a hair oil and tonic. Various mixtures used for oiling the hair have been sold under this name and the following are current formulas for such mixtures.

VIII.

Olive oil	f.oz. 32
Alkanet root	av.oz. 2
Or alkannin	gr. 75
Oil of lemon.....	drops 30
Oil of cinnamon.....	drops 20
Oil of clove.....	drops 20
Oil of rose.....	drops 10

Digest the olive oil with the alkanet or alkannin, strain, allow to cool, and add the volatile oils.

Other cheaper vegetable oils may be substituted for the olive oil.

Cocoanut Oil Hair Dressing.

Cocoanut oil was at one time highly extolled as a hair grower, hence its use in hair oils. The characteristic feature of these mixtures is that they deposit a portion of the cocoanut oil on cooling.

IX.

Cocoanut oil	f.oz. 8
Castor oil	f.oz. 6
Alcohol	f.oz. 14
Oil of lavender flowers.....	f.dr. 2
Oil of bergamot.....	drops 60
Oil of rose geranium.....	drops 20

Melt the cocoanut oil, and add it to the castor oil dissolved in the alcohol. Shake well together and add the volatile oils.

X.

Cocoanut oil	av.oz. 2½
Castor oil	f.oz. 16

Alcohol	fl.oz.	16
Oil of lavender flowers.....	fl.dr.	2
Oil of bergamot.....	fl.dr.	2
Oil of white thyme.....	m.	30

Prepare like the preceding.

PERFUMES FOR HAIR OILS AND POMADES.

The following mixtures may be employed for perfuming oily mixtures which are intended to be used as hair oils and hair pomades.

I.

Oil of lavender flowers.....	fl.oz.	1
Oil of rosemary.....	fl.oz.	1
Oil of clove.....	fl.dr.	2
Oil of cassia.....	fl.dr.	1

II.

Oil of bergamot.....	fl.dr.	10
Oil of lemon.....	fl.dr.	4
Oil of clove.....	drops	20
Oil of orange.....	drops	20
Oil of cinnamon.....	drops	10
Oil of bitter almond.....	drops	5

III.

Oil of bergamot.....	fl.dr.	7
Oil of rose.....	fl.dr.	1
Oil of rose geranium.....	m.	30
Oil of clove.....	fl.dr.	1½

IV.

Oil of bergamot.....	fl.dr.	5
Oil of sandalwood.....	fl.dr.	1½
Oil of orris, liquid.....	fl.dr.	1½
Oil of clove.....	drops	40
Oil of rose.....	drops	20

V.

Oil of bergamot.....	fl.dr.	4
Oil of rose.....	m.	30
Oil of cassia.....	m.	30

VI.

Oil of bergamot.....	fl.oz.	1
Oil of palmarosa.....	fl.dr.	4
Oil of cinnamon.....	fl.dr.	4
Oil of neroli.....	fl.dr.	2
Eugenol	fl.dr.	2
Isosafrol	drops	15
Terpineol	dr.	4

COLORS FOR HAIR OILS AND POMATUMS.

Hair oils and pomatums may be colored fine red by digestion with alkanet root which yields its coloring matter readily to hot fats or oils. The degree of color may be varied by using different amounts of the root. Instead of alkanet root, it is more convenient to

use alkannin, its coloring principle. It is readily soluble in hot fats.

A yellow color may be imparted to hair pomades by digesting them with powdered curcuma root or by adding palm oil. Hair oils are best colored yellow by digestion with curcuma.

A brown color may be imparted to oils and pomades by digestion with annatto.

Besides the coloring substances mentioned, there are a number of anilines that are suitable for coloring oils and pomades. These are the kind known as "oil-soluble anilines."

When alkanet, curcuma or annatto are used for coloring, they should be reduced to coarse powder, then macerated with the warmed or heated oil or pomade until the desired tint is obtained, stirring frequently, then straining (or filtering if necessary), and finally adding the perfume.

HAIR POMADES OR POMATUMS.

These preparations are made with various substances such as lard, beef marrow, cocoa butter, wax, cocoanut oil, petrolatum, ceresin, wool-fat, castor oil, olive oil, cottonseed oil, etc. To obtain a good product the various fatty ingredients must be in perfectly fresh condition. Most of the hair pomades as now made consist of petrolatum, this being so very cheap.

These fatty bodies should be rendered pleasantly odorous by the addition of perfumes or mixtures of various oils, synthetic perfumes, etc. In some of the formulas given below, the perfume is mentioned; in such as specify no perfume, the scents or perfumes under the preceding title may be employed.

Some formulas for hair pomades mention water as an ingredient. This is employed for cheapening purposes.

In combining the ingredients of pomades, the less fusible fats, like wax or spermaceti, should be melted first, the lard, petrolatum, or fixed oil should then be added, and the whole allowed to be-

come nearly cold before incorporating the perfume.

I.

Yellow wax	av.oz. 4
Cottonseed oil	fl.oz. 20
Lard	av.oz. 5

Mix by fusion, stir until cold, incorporating perfume with the mixture during cooling.

II.

Yellow wax	av.oz. 2
Benzoinated lard	fl.oz. 3
Castor oil	fl.oz. 6
Sweet almond oil.....	fl.oz. 1
Olive oil	fl.oz. 4

Melt the wax at a gentle heat, add the oils and lard, stir till all is melted, allow to cool, stirring constantly till hard. While it is cooling any desired perfume may be incorporated.

III.

Yellow petrolatum	av.oz. 12
Flower pomade	av.oz. 3
Yellow wax	av.oz. 2

Melt the wax, then add the pomade and petrolatum, and continue the heat and stir until all are melted. Allow to cool, stirring well to secure a uniform mixture.

Any of the imported flower pomades may be used. The product has a fine odor.

IV.

White wax	av.oz. 20
Sweet almond oil.....	fl.oz. 8
Oil of bergamot.....	fl.dr. 2
Oil of lemon.....	fl.dr. 1
Oil of lavender flowers.....	m. 30
Oil of clove.....	m. 15

Melt the wax, add the almond oil, stir as the mixture cools, and incorporate the essential oils.

Castor Oil Hair Pomade.

V.

Castor oil	av.oz. 16
White wax	av.oz. 4
Oil of bergamot.....	fl.dr. 3
Oil of lavender flowers....	drops 30

Melt the wax, add the castor oil, mix well and when nearly cold add the remaining ingredients.

VI.

Castor oil	av.oz. 16
Petrolatum	av.oz. 4½
Yellow wax	av.oz. 2½

Melt the wax, add the petrolatum and oil, and when nearly cold add any suitable perfume.

VII.

Wax, white or yellow.....	av.oz. 6
Castor oil	av.oz. 10
Cottonseed oil	av.oz. 4

Melt the wax, add the other ingredients, and stir until cool. Suitable perfume may be added.

Cocoanut Oil Hair Pomade.

VIII.

Lard	av.oz. 3
Cocoanut oil	av.oz. 12
Ceresin, white	av.oz. 3
Borax	dr. 2
Distilled water	fl.oz. 12

Melt the ceresin at a gentle heat, add the lard and oil, add the previously warmed water containing the borax in solution, and stir until congealed. The pomade may be perfumed if desired.

Crystal Hair Pomades. (Transparent Pomades.)

Under this heading are grouped hair pomades which are made to assume a crystalline appearance. They are also translucent, whence the name "transparent pomade."

IX.

Castor oil	av.oz. 17
Olive or cottonseed oil....	av.oz. 12
Spermaceti	av.oz. 4
Oil of ylang ylang.....	fl.dr. 5
Oil of rose.....	drops 8
Oil of bergamot.....	drops 8
Oil of neroli.....	drops 5
Oil of rose geranium.....	drops 2
Oil of bitter almond.....	drop 1
Heliotropin	gr. 1

Fuse the first three ingredients together and add the perfume before it has congealed.

The pomade appears to best advantage in transparent glass jars and in order that it may appear as coarsely crystalline as possible, allow the congealing to go on as slowly as possible by placing the filled jars in warm water, and allow

the mixture to stand undisturbed for 6 hours.

X.

Olive oil	av.oz. 18
Spermaceti	av.oz. 2
Oil of bergamot.....	fl.dr. 2
Oil of clove.....	drops 6
Oil of cinnaman.....	drops 10
Oil of neroli.....	drops 10

Dissolve the spermaceti in the oil by the aid of heat. Place the bottles up to the neck in water as hot as they will bear. Then fill with the pomade, adding the perfume immediately before pouring out. Cover the bottles as soon as they are filled, and do not disturb them until the pomade is perfectly solid. It may be colored with palm oil or oleaceous annatto coloring. The latter can be made by digesting 1 ounce of annatto in 8 ounces of olive oil.

XI.

Spermaceti	av.oz. 1
Japanese wax	av.oz. 1¼
Castor oil	av.oz. 12½
Perfume, to suit.	

This may be colored with alkannin. It is to be prepared like any of the preceding.

Marrow Hair Pomades.

Under this heading are included a number of hair pomatums known by this name and which usually contain beef marrow.

XIV.

Beef marrow	av.oz. 8
Beef suet	av.oz. 4
Yellow wax	av.oz. 1
Castor oil	av.oz. 4
Oil of bergamot.....	fl.dr. 2
Oil of lemon.....	fl.dr. 1
Oil of orange.....	fl.dr. 1

Melt the wax, suet and marrow, strain, allow to cool somewhat, and add the volatile oils.

XV.

Beef marrow	av.oz. 4
Lard	av.oz. 12

Melt together, strain, and perfume as desired.

Anti-Kink Hair Pomade.

XVI.

Beef suet	av.oz. 16
-----------------	-----------

Yellow wax	av.oz. 2
Castor oil	av.oz. 2
Benzoic acid	gr. 10
Oil of lemon.....	fl.dr. 1
Oil of cassia.....	drops 15

Mix the suet and wax, add the castor oil and acid, allow to cool somewhat, and incorporate the other oils.

This is used for taking the kinks out of and straightening the hair. It is especially adapted for use by colored people.

Bear's Grease.

A number of hair pomades are known by this title. It is almost needless to state that none of the preparations bearing this title are made with any ingredients from the animal which furnishes the name.

XVII.

Beef marrow	av.oz. 8
Lard	av.oz. 24
Oil of lemon.....	fl.dr. 6
Oil of rose.....	drops 15
Oil of bergamot.....	drops 15
Oil of cinnamon.....	drop 1
Cumarin	gr. 1

Mix the marrow and lard by fusion, strain, allow to cool somewhat, add the other ingredients and stir frequently until solid.

BANDOLINE.

This is a mucilaginous preparation applied by ladies to the hair before "frizzing" or curling, the object being to cause the hair to remain longer in curl. They may be either in powder or liquid form.

Powders.

I. Bandoline in powder form is usually powdered tragacanth perfumed by trituration with suitable aromatic volatile oils or synthetic perfume. In using, the powder is mixed with water to a suitably thick liquid, which is then applied to the hair.

II. This is a good formula:

Tragacanth, powder	av.oz. 2
Borax, powder	gr. 30
Soap bark, powder.....	gr. 20
Oil of rose geranium.....	m. 30
Oil of rose.....	drops 3
Oil of cinnamon.....	drops 5
Oil of bitter almond.....	drops 2

Mix well, first rubbing the oils with the borax.

Use like the preceding.

Liquids.

These may be made with any kind of a mucilaginous substance such as tragacanth, quince seed, Irish moss, etc. If perfumed with rose, these may be known as "rose bandoline," if with benzaldehyde or oil of bitter almond, "almond bandoline," etc. The toilet creams made with gum or mucilage may be used, or any of the following:

III.

Gum tragacanth, whole.....dr.	2
Water	fl.oz. 12
Alcohol	fl.oz. 2
Oil of rose.....	drops 5

Add the gum tragacanth to the water, previously warmed. When the gum is thoroughly softened, strain the mixture with pressure through a cloth and add to it the oil of rose dissolved in the alcohol. Any other essential oil or a synthetic perfume may be substituted for the rose oil. The preparation may be tinted pink or red by the addition of solution of carmine.

If a thicker preparation is desired, more tragacanth may be added.

IV.

Tragacanth, powder	av.oz. 1
Alcohol	fl.oz. 2
Oil of neroli.....	drops 15
Oil of rose.....	drops 15
Water	fl.oz. 24

Dissolve the oils in the alcohol and in a large mortar triturate the gum with this solution to a smooth mixture, and then incorporate with the water added all at once.

The mixture may also be made by agitation in a bottle.

V.

Irish moss	av.oz. 2
Water	fl.oz. 16
Boracic acid	dr. 2
Cologne water	fl.oz. 2

Boil the Irish moss and boracic acid with the water, strain, add water to make 14 fluidounces, and mix with the cologne water.

VI.

Quince seed, bruised.....	dr. 3
Water	fl.oz. 14
Boric acid	gr. 30
Cologne water	fl.oz. 2

Macerate the seed in the water, previously warmed, for 6 hours, agitating frequently, strain, in the liquid dissolve the boric acid by the aid of heat, allow to cool, and add the cologne water.

HAIR-CURLING LIQUID.

The first set of these preparations are of a mucilaginous character, the second are either alkaline or resinous.

I. For keeping hair in curl:

Borax powder	av.oz. 1
Gum arabic	gr. 30
Spirit of camphor.....	fl.dr. 6
Water, warm	fl.oz. 16

Dissolve solids in warm water, and when cool, add the camphor.

Wet the hair with above and roll on papers as usual, let dry, unroll, and form into ringlets.

II.

Gum arabic	av.oz. 1
Sugar	av.oz. 1
Boric acid	av.oz. 1/2
Rose water	fl.oz. 15

Mix and dissolve.

Use like the preceding.

III. For curling without papers:

Sodium bicarbonate	av.oz. 1/2
Borax	av.oz. 1/2
Cologne water	fl.oz. 2
Alcohol	fl.oz. 2
Tincture of cochineal.....	fl.oz. 1
Water	fl.oz. 24

Dissolve the two salts in the water, add the other ingredients, and strain or filter.

IV.

Tincture of benzoin.....	fl.oz. 1 1/2
Alcohol, to make.....	fl.oz. 8
Perfume with oil of rose.	

DANDRUFF REMEDIES.

Dandruff is known to medical men as seborrhea capitis, although other conditions produce similar results and are benefited by the same treatment, among these being dry eczema, psoriasis and pityriasis capitis. It is an inflammation of the sweat glands, characterized by

rapid scaling of the upper layers of the skin. The scales or crusts are so abundant as to fill the hair as if with powder and also to cover the shoulders. Dandruff is always accompanied by more or less itching or irritation, which is more marked in summer time when the sweat glands are most active. On account of its infectious character, each person should have his own hair brush and comb, both at barber shop and at home, as one member of a family afflicted with the affection may communicate it by means of these implements to all the other members of the family.

Dandruff urgently requires treatment, as it will lead to great loss of hair and permanent baldness.

Before beginning treatment for dandruff, it is necessary to thoroughly cleanse the scalp and hair, also all brushes and combs, with castile soap, green soap, liquid soap, shampoo, or other preparation, to remove all the scales. Occasionally the washing may have to be repeated, but too frequent washing of the head is injurious. The use of fine combs to scrape the scalp should not be countenanced, as this irritates the skin and exposes it still more to the ravages of the disease. With the use of some dandruff remedies it is not necessary to wash the head frequently, as they combine detergent, or cleansing, and curative properties.

Favorite remedies for dandruff are resorcin and sulfur, the former being used in lotions, the latter in ointments or pomades. These have the added advantage of being stimulants to the hair. Other common ingredients in dandruff remedies are chloral hydrate, salicylic acid, corrosive sublimate, tannin, and betanaphthol. These preparations may be perfumed to suit, and the lotions may be colored red, greenish, brown or yellow as may be desired. Red color may be imparted with cudbear or carmine, green with chlorophyll, brown with madder or caramel, and yellow with turmeric or saffron.

Lotions.

I. Dr. H. L. Pearson highly recommends this treatment:

Wash the head thoroughly with terebene soap (presumably other mild antiseptic soap would serve equally well), rinse well, and dry with a towel; then rub in a lotion composed of

Mercuric chlorid	gr. 24
Glycerin	fl.oz. 4
Cologne water	fl.oz. 4
Water, to make.....	fl.oz. 16

Dry the hair with a towel and apply a solution composed of

Betanaphthol	gr. 100
Alcohol	fl.oz. 16

Allow this to evaporate spontaneously, and finally rub in a small quantity of an application consisting of

Salicylic acid	gr. 190
Comp. tincture of benzoin.....	fl.dr. 2½
Olive oil, to make.....	fl.oz. 16

This treatment should be carried out daily for a month, then on alternate days for 2 weeks.

The dandruff is said to disappear in a short time, the hair again becoming vigorous.

II.

Mercuric chlorid	gr. 1
Resorcin	dr. 4
Chloral hydrate	dr. 8
Bay rum	fl.oz. 8
Water, to make.....	fl.oz. 14

If the hair is too dry, a small amount of castor oil, about 2 fluidrams, may be added to the above.

This is to be rubbed into the scalp once a day. When dandruff ceases to form, use once every other day for two weeks, then once a week.

III. Burnette's formula:

Resorcin	dr. 6
Salicylic acid	gr. 20
Bay rum	fl.oz. 16

Mix and dissolve the solids by agitation.

The salicylic acid prevents the resorcin from altering the color of the hair.

This is to be well rubbed into the scalp 2 or 3 times a week.

IV. Unna's Spiritus Capillorum:

Resorcin	gr. 160
Castor oil	fl.dr. 2½
Cologne water	fl.oz. 3
Alcohol	fl.oz. 12½

Apply once a day to the roots of the hair.

All traces of soap and alkali must be removed from the hair before using this lotion to prevent discoloration.

V. Gessner's Lotion:

Resorcin	dr. 3
Chloral hydrate	dr. 4
Tannic acid	dr. 4
Tincture of benzoin.....	fl.dr. 1
Castor oil	fl.dr. 4
Alcohol, to make.....	fl.oz. 14

Apply once a day to the roots of the hair.

The author of this preparation rather prefers the ointment mentioned below.

VI. Foote's formula:

Resorcin	dr. 3
Glycerin	fl.oz. 2
Alcohol	fl.oz. 3
Rose water	fl.oz. 6
Distilled water, to make....	fl.oz. 16

Use once a day.

VII. An improved formula is the following:

Wool-fat, anhydrous	av.oz. 3
Quillaia	av.oz. 1
Water, alcohol, each.....	sufficient

Macerate the quillaia in the water for several days, strain, filter the liquid, and add the alcohol. Then warm the liquid to above the melting point of the wool-fat and shake with the latter until well mixed. Finally add enough of a mixture of 1 part of alcohol and 6 of water to make 64 fluidounces.

This is a milk-like liquid from which the wool-fat separates as a cream-like layer but which commingles readily with the liquid on agitation.

Other substances such as quinine, tincture of cantharides, menthol, perfume and other substances may be added to this emulsion.

Ointments.

VIII. Dr. Jackson's Sulfur Cream:

Precipitated sulfur	dr. 6
Borax	gr. 25

White wax	dr. 6
Paraffin oil	fl.oz. 4½
Rose water	fl.oz. 2

Prepare like "cold cream," thoroughly incorporating the sulfur.

This is to be applied once or twice a week. It is highly extolled by Dr. Jackson.

IX. Dr. Gessner's ointment:

Precipitated sulfur	dr. 5
Resorcin	dr. 2
Salicylic acid	gr. 80
Tincture of benzoin.....	fl.dr. 1½
Petrolatum	av.oz. 6½

Shampoo the head, dry thoroughly, then apply this ointment, rubbing well into the scalp. This treatment is to be continued every night.

X. Shoemaker's remedy:

Peru balsam	dr. 2
Betanaphthol	dr. 4
Benzoinated lard	av.oz. 1
Wool-fat, hydrous	av.oz. 3

Use like the preceding.

XI.

Salicylic acid	gr. 140
Precipitated sulfur	dr. 6
Cold cream, U. S. P.....	av.oz. 7½

Cleanse the hair with a shampoo, then for 6 nights rub the above ointment thoroughly into the scalp and on the seventh night shampoo the head again. After six weeks of this treatment the dandruff will probably be cured, or at any rate the treatment may be continued less frequently.

XII. Bronson's ointment:

Ammoniated mercury	dr. 1½
Calomel	dr. 3
Petrolatum	av.oz. 4

Shampoo the head with U. S. P. liniment of soft soap, rinsing thoroughly to remove all the soap, then rub in the above ointment every other night, alternating with a solution of 1 dram of resorcin in 8 ounces of diluted alcohol.

Powders.

XIII.

Resorcin	gr. 60
Boric acid	gr. 30

Dissolve in 4 fluidounces of water before use.

XIV.

Resorcin	gr. 60
Tannoform	gr. 60
Salicylic acid	gr. 5

Before use, dissolve in a mixture of 3 fluidounces of alcohol and 1 of water, and filter.

FOR BALDNESS AND LOSS OF HAIR.

Falling-out of hair, technically called alopecia, may be general (not confined to spots), due to various acute diseases such as typhoid fever, scarlet fever or erysipelas. It is frequently congenital (hereditary) and may be due to advancing age; it may be due to physical weakness, nervous debility or severe mental application. It is frequently produced by local causes such as dandruff, pityriasis, etc., also to pressure of tight-fitting hats which deprive the head and hair of proper nutrition. If the loss of hair is due to any local disease, this must be cured first when probably other treatment will not be required. By far the most prolific cause of baldness is dandruff. For dandruff remedies, see article immediately preceding this one.

There is also a form of baldness known as alopecia areata which manifests itself in loss of hair in circular spots, usually being most severe in the central portion of the scalp. This disease is believed also to be of contagious character.

Various methods of treatment for alopecia or loss of hair have been offered and what are believed to be the best among these have been selected. Besides the remedies mentioned, see also those under the heading Hair Tonics.

I. Lassar's routine treatment for the cure of baldness requires systematic attention for a period of at least 6 to 8 weeks. The head is lathered thoroughly with soap and hot water, preferably tar soap, rinsing well with warm water and then with cold water. This is to be done daily at first but less often afterwards. For washing long blonde hair, the following mixture is recommended:

Potassium carbonate	gr. 90
Sodium carbonate	gr. 90
White castile soap, powder.....	av.oz. 1
Rose water	fl.oz. 15

After thoroughly washing and drying the hair, moisten the roots of the hair with a mixture of

Mercuric chlorid	gr. 10
Cologne water	fl.oz. 2
Glycerin	fl.oz. 2
Rose water	fl.oz. 12

Mercuric chlorid itself has the reputation of promoting the growth of hair. If there is itching, 15 minims of carbolic acid may be added to this mixture. The following is then applied:

Thymol	gr. 10
Alcohol	fl.oz. 8

Or this:

Betanaphthol	gr. 10
Absolute alcohol	fl.oz. 8

After the hair has dried, this ointment is rubbed in the roots of the hair:

Salicylic acid	gr. 35
Tincture of benzoin.....	gr. 70
Oil of bergamot.....	drops 20
Petrolatum	av.oz. 4

Formerly a neat's-foot oil mixture was advised, but pure neat's-foot oil is not always obtainable.

Salicylic acid	gr. 75
Tincture of benzoin.....	fl.dr. 2
Neat's-foot oil	fl.oz. 8

Every night the hair should be oiled with a mixture of turpentine and wool-fat containing 10% of the former, care being taken to avoid undue irritation of the skin, or with the following pomade:

Carbolic acid	gr. 45
Peru balsam	gr. 90
Sulfur	av.oz. 1
Oil of bergamot.....	m. 20
Wool-fat, anhydrous.....	av.oz. 5

This is to be diluted with water before use (amount not stated).

II. A French writer, Dr. Sabourand, says the prime remedy to prevent loss of hair is to avoid greasy accumulation on the scalp by frequent washing with soap containing little or no potash, as this is irritating. The hair and scalp should be rinsed thoroughly with warm water, after which it should be dried with a towel, with the aid of heat if

necessary. He advises against the use of cantharides, but thinks pilocarpine, quinine, caffeine and camphor stimulate the growth of hair. He suggests the following:

Pilocarpine hydrochloridgr. 6
Spirit of lavenderf.dr. 10
Etherf.dr. 10
Ammonia waterf.dr. 1
Alcohol, to makef.oz. 16

Dissolve the alkaloid in a small amount of water and add the other ingredients.

This is to be rubbed into the scalp daily.

III. Bartholow's prescription:

Fluid extract of jaborandif.oz. 2
Tincture of cantharidesf.oz. 1
Soap linimentf.oz. 5

Use once daily.

IV. Recommended by Bulkley:

Tincture of cantharidesf.oz. 1
Tincture of capsicumf.oz. 1
Tincture of nux vomicaf.oz. 2
Castor oilf.oz. 1
Alcohol or cologne water, to makef.oz. 16

Apply once daily.

V. Dr. McDonald's prescription:

Resorcindr. 6
Tincture of capsicumf.oz. 2½
Castor oilf.oz. 1½
Alcoholf.oz. 12

Oil of rose, to perfume.
Rub into the scalp once daily.

VI. McKee's treatment:

Tincture of jaborandif.oz. 1
Soap linimentf.oz. 1
Cologne waterf.oz. 2

This should be rubbed into the scalp once daily. The jaborandi darkens the hair, hiding slight grayness. The same authority also recommends a mixture of

Carbolic acidf.dr. 1
Salicylic aciddr. 3
Castor oilf.dr. 3
Alcohol, to makef.oz. 6

VII. Lactic acid has attained some reputation as a hair grower, according to some observers, growing hair even on nearly bald spots. A 25% solution in water is recommended. This is to be rubbed into the scalp until it causes pus-

tulation. It is then to be discontinued until the pustules disappear, then to be used again. After the hair begins to grow, use the following mixture:

Lactic acidf.oz. 2
Quinine sulfategr. 40
Glycerinf.oz. 1
Water, to makef.oz. 8

Apply daily to the hair as a dressing. It may be perfumed to suit with essential oils or synthetics. The quinine and glycerin are said to prevent extreme irritation.

HAIR TONICS.

The preparations known by the general title of hair tonics are intended as tonics to hair and scalp to prevent and cure dandruff, baldness, dryness of the hair, etc.

The preparations under the preceding headings are also real hair tonics.

Some of these preparations contain cinchona or quinine; some contain sulfur and lead salts; others contain fixed oils like benne or cocoanut oil, and others contain still other ingredients.

They are known by such titles as "hair restorer," "hair restorative," "hair invigorator," "hair vigor," "hair promoter," "hair grower," "hair lotion," "hair renewer," "hair wash," "hair renovator," "hair balsam," etc.

The hair tonics of the market may be divided into three classes: 1. Mixtures of sulfur and glycerin, with or without lead acetate, depending on whether or not the preparation is to act as a dye as well as a tonic. The glycerin serves mainly to hold the sulfur in suspension, which latter is credited with hair-tonic properties and which in conjunction with the lead forms black lead sulfid on exposure to the air and light. (2) Dilute alcoholic solutions, with or without glycerin or borax, containing essential oils and some kind of hair stimulant, cantharides being the favorite, but capsicum also being employed. (3) A third class contains the constituents of cinchona and sometimes of nux vomica.

Quinine and Cinchona Hair Tonics. (Eau de Quinine.)

These preparations are usually dispensed under the titles "quinine hair wash," "quinine hair tonic," and "eau de quinine."

They may be colored red, if desired, by means of red saunders or other red coloring.

I.

Quinine sulfate	gr. 20
Bay rum	fl.dr. 4
Glycerin	fl.dr. 4
Tincture of cantharides.....	fl.dr. 2
Tincture of capsicum.....	fl.dr. 2
Water, to make.....	fl.oz. 16
Mix, dissolve, and filter.	

II.

Quinine sulfate	gr. 20
Glycerin	fl.oz. 1
Cologne water	fl.oz. 2
Bay rum	fl.oz. 2
Rose water	fl.oz. 11
Mix, dissolve, and filter.	

III.

Quinine sulfate	dr. 1
Glycerin	fl.oz. 1
Tincture of cantharides.....	fl.dr. 3
Rose extract	fl.dr. 6
Jamaica rum	fl.oz. 3
Alcohol	fl.oz. 5
Water	fl.oz. 6
Mix, dissolve, and filter.	

IV.

Quinine sulfate	dr. 1
Fluid extract of jaborandi..	fl.oz. 1
Tincture of cantharides.....	fl.oz. 1
Glycerin	fl.oz. 2
Bay rum	fl.oz. 12
Mix, dissolve, and filter.	

V.

Quinine sulfate	gr. 75
Tincture of cantharides.....	fl.oz. 2
Weaker tincture of orris.....	fl.oz. 4
Cologne water	fl.oz. 10
Water	fl.oz. 10
Alcohol	fl.oz. 8

Tincture of cudbear, enough to color.

Dissolve the quinine in the cologne water and alcohol, add the tinctures, coloring and water, let stand a few hours, and then filter clear. Enough coloring should be added to give a bright red color. More perfume may be added to suit.

VI.

Tincture of red cinchona....	fl.oz. 1
Tincture of cantharides.....	fl.dr. 2
Comp. tincture of lavender..	fl.dr. 2
Glycerin	fl.oz. 2
Alcohol, to make.....	fl.oz. 16

Hair Tonics Containing Oil.

VII.

Castor oil	fl.oz. 10
Alcohol	fl.oz. 20
Tincture of cantharides.....	fl.dr. 4
Oil of bergamot.....	fl.dr. 4
Oil of rose.....	drops 10
Red saunders	dr. 2

Mix, macerate for several days, agitating occasionally and strain.

VIII.

Castor oil	fl.oz. 8
Tincture of cantharides.....	fl.oz. 1
Tannin	dr. 1
Oil of bergamot.....	fl.dr. 1
Oil of clove.....	fl.dr. 1
Oil of lavender flowers....	drops 20
Oil of rosemary.....	drops 20
Alcohol	fl.oz. 23

Oil and Quinine Hair Tonic.

IX.

Quinine sulfate	gr. 75
Castor oil	fl.oz. 2
Tincture of cantharides.....	fl.oz. 2
Oil of bay.....	m. 30
Alcohol	fl.oz. 28
Tincture of curcuma, to color yellow.	
Mix, agitate till the quinine is dissolved, and filter.	

Hair Tonics Containing Resorcin.

X.

Resorcin	dr. 2
Salicylic acid	gr. 20
Tincture of cantharides.....	fl.dr. 4
Glycerin	fl.oz. 1
Diluted alcohol, to make...	fl.oz. 16
Heliotropin	gr. 10
Oil of rose.....	drops 5

XI.

Resorcin	gr. 90
Glycerin	fl.dr. 4
Tincture of cantharides.....	fl.dr. 4
Compound tincture of lavender	fl.dr. 4
Bay rum, to make.....	fl.oz. 16

XII.

Resorcin	dr. 2½
Tannin	dr. 5
Chloral hydrate	dr. 5
Castor oil	fl.oz. 2
Tincture of benzoin.....	fl.oz. 2
Vanillin	gr. 20
Alcohol, to make.....	fl.oz. 32

Lanolin Hair Lotion.

XIII. See Liebreich's Hair Milk, under Dandruff Remedies.

Pilocarpine Hair Tonics.

Pilocarpine is used frequently as an ingredient of hair tonics. It was first used as tincture of fluid extract of jaborandi in connection with quinine, as in formula No. IV under Quinine and Cinchona Hair Tonics, which see.

Pilocarpine is reputed to possess the property of darkening the hair as well as promoting its growth. A pomade as well as lotions is mentioned here.

XIV.

Jaborandi	av.oz.	1/2
Cinchona	av.oz.	1
Glycerin	fl.oz.	2
Diluted alcohol, to make...	fl.oz.	16
Perfume, to suit.		

Reduce the drugs to coarse powder and percolate with the diluted alcohol to obtain 14 fluidounces of liquid; to the latter add the glycerin and any suitable perfume.

XV.

Quinine sulfate	gr.	20
Tincture of jaborandi.....	fl.oz.	1
Glycerin	fl.oz.	1
Cologne water	fl.oz.	2
Bay rum	fl.oz.	2
Rose water	fl.oz.	11
Diluted sulfuric acid.....	m.	20

Dissolve the quinine in the rose water with the aid of the acid, add the other ingredients, and filter.

Sage Hair Tonic.**XVI. Utech's formula:**

Fluid extract of sage.....	fl.oz.	2
Tincture of green soap.....	fl.oz.	2
Tincture of red cinchona...	fl.dr.	6
Tincture of cantharides.....	fl.dr.	3
Glycerin	fl.oz.	1
Chloral hydrate.....	dr.	5
Cologne water	fl.oz.	4
Oil of bergamot.....	fl.dr.	1
Oil of sweet orange.....	fl.dr.	1
Oil of neroli.....	drops	10
Alcohol	fl.oz.	1
California brandy, to make...	fl.oz.	32

Mix the first five ingredients together, dissolve the chloral hydrate in the cologne water, dissolve the oils in the al-

cohol, add this to the cologne water solution and mix all the ingredients together. Let stand for a week or longer, and then filter through calcium phosphate.

Arnicated Glycerole of Cantharides. XVII.

Ammonium carbonate	dr.	1
Ammonium chlorid	dr.	1
Salicylic acid	gr.	20
Glycerin	fl.oz.	1
Cologne water	fl.oz.	1
Tincture of arnica.....	fl.oz.	2
Tincture of cantharides....	fl.oz.	2
Alcohol	fl.oz.	2
Water	fl.oz.	8

Dissolve the ammonium salts and salicylic acid in the water, add the other ingredients and filter clear through calcium phosphate.

This mixture shampoos or cleanses the head as well as stimulating the growth of the hair.

It is to be applied night and morning, rubbing well into the roots of the hair.

Prof. Gross's Hair Tonic.**XVIII.**

Tincture of cantharides....	fl.dr.	4
Tincture of capsicum.....	drops	50
Glycerin	fl.dr.	10
Cologne water, to make....	fl.oz.	16

Locock's Hair Lotion.

XIX. There are many variations of this formula, but the following is said to be the original:

Expressed oil of mace.....	gr.	110
Olive oil	fl.oz.	1
Stronger ammonia water..	fl.oz.	1
Spirit of rosemary.....	fl.oz.	2
Rose water, to make.....	fl.oz.	20

Beat up the oil of mace with the olive oil, added, not too gradually; after each addition and incorporation of olive oil add a small amount of the ammonia water, beating until the mixture is saponified. When all the olive oil has been added, incorporate the rose water, then the spirit of rosemary, and finally the remainder of the ammonia water.

Erasmus Wilson's Hair Lotion.

XX. This is said to be the original formula for this preparation as given by Dr. Wilson himself:

Sweet almond oil.....	f.oz. 2
Stronger ammonia water...	f.oz. 2
Chloroform	m. 50
Oil of rosemary.....	m. 90
Oil of lemon.....	drops 2
Alcohol, to make.....	f.oz. 16

Father Kneipp's Hair Tonic.

XXI. There may be occasional calls for this preparation. This is the formula: Boil 200 g. of finely cut fresh nettle root in 1000 cc. of water and 500 cc. of vinegar for one-half hour, allow to cool and then strain.

The scalp is to be washed thoroughly with this lotion every evening before retiring.

Lead and Sulfur Hair-Color Restorers.

These are the preparations that have been sold in the past under such names as "hair promoters," "hair vigors," "hair invigorators," "hair restorers (or restoratives)," etc. The sulfur and lead are not only alleged to be hair tonics, but act also as slow dyes or coloring agents, darkening grayish hair, and in this manner restoring its color.

The sulfur and lead combine upon exposure to air and light to form black lead sulfid. On account of the action of light, these preparations should always be either in dark amber-colored bottles or the container should be covered with a closely-adherent wrapper.

Lead preparations being all poisonous, it would seem that the public should be apprised of this fact. However, cases of poisoning from the use of these hair preparations are seemingly unknown.

The lead in these preparations is usually in the form of the acetate but the nitrate is equally serviceable. The sulfur is employed in the form of precipitated or sublimed (or better, washed), sulfur. It may also be in combination with sodium hyposulfite. When this latter is added to the lead salt, a precipitate of lead hyposulfite is formed which must be redissolved in an excess of the hyposulfite. The hyposulfite prepa-

arations are therefore clear while the sulfur preparations contain sulfur in suspension and must be agitated before use.

Other ingredients of these preparations are glycerin, which helps to keep the sulfur in suspension, tincture of cantharides, perfume, alcohol, water, bay rum, rose water, etc.

These preparations should be applied once or twice daily to the hair.

XXII. Formula of the British Pharmaceutical Codex:

Lead acetate, powder.....	av.oz. ¾
Precipitated sulfur	av.oz. 1½
Glycerin	f.oz. 5
Distilled water, to make....	f.oz. 40

Rub the lead salt and sulfur together until well mixed, triturate with the glycerin, and gradually add enough distilled water to make up the required volume. This may be perfumed if desired.

XXIII. *What appears to be the original, or at least one of the early preparations of this kind is the following, known as Gen. Twigg's Hair Restorer or Dye:

Precipitated sulfur.....	dr. 4
Lead acetate.....	dr. 4
Rose water.....	f.oz. 16

Triturate all together in a mortar.

The addition of 2 fluidounces of glycerin will remove the undersirable drying property of the preparation.

XXIV.

Lead acetate, pure.....	av.oz. 1
Ammonium hyposulfite,	
crystal	av.oz. 2
Alcohol	f.oz. 1
Glycerin	f.oz. 1
Oil of bitter almond....	drops 20
Distilled water, to make....	f.oz. 64

Dissolve the salts separately in a portion of the water and mix the solutions. Dissolve the oil in the alcohol, add the glycerin, and mix this with the previously prepared compound. Other perfume may be added and the amounts of alcohol and glycerin may be somewhat increased.

XXV. A pomade for the hair also containing lead and sulfur is this:

Lead acetate, fine powder.....av.oz.	$\frac{1}{4}$
Precipitated sulfur.....av.oz.	$\frac{1}{2}$
Tincture of cantharides.....av.oz.	1
Oil of rosemary.....fl.dr.	1
Oil of lavender flowers....fl.dr.	1
Wool-fat, hydrous.....av.oz.	4
Castor oil.....fl.oz.	5
Petrolatum.....av.oz.	6

Rub the lead acetate and sulfur to a smooth paste with a portion of the castor oil, add the petrolatum, wool-fat, and remainder of the castor oil, and then incorporate the tincture and essential oils.

This is to be applied once daily.

LIME JUICE AND GLYCERIN.

This preparation was at one time a popular one for the hair. Very singularly it does not contain lime juice and seldom glycerin, but is made with a basis of lime water and oils, with oil of lemon as the perfume.

The following formulas are offered:

I.

Sweet almond oil.....fl.oz.	7
Oil of lemon.....fl.dr.	2
Lime water, to make....fl.oz.	16
Mix well by shaking.	

II.

Sweet almond oil.....fl.oz.	6
Olive oil.....fl.oz.	6
Lime water.....fl.oz.	5
Syrup of lime.....fl.oz.	1
Oil of lemon.....fl.dr.	1
Mix well by agitation.	

Peanut oil may be used instead of the almond and olive oils. All fixed oils do not make a smooth mixture with lime water.

OINTMENT FOR DRY SCALP AND HAIR.

Wool fat, hydrous.....av.oz.	4
White petrolatum.....av.oz.	4
Oil of lavender flowers....drops	20

Apply to the scalp with the tips of the fingers about twice a week.

HAIR GLOSS.

Hair glosses are for the purpose of giving a gloss and a smooth, soft appearance to the hair, glycerin or castor oil being the main ingredient which is dissolved in alcohol and perfumed with essential oils or synthetic perfumes to

suit the taste and price. Besides the preparations mention below, the mixtures known as brilliantines, which see, are also used as hair glosses.

I.

Castor oil.....fl.oz.	4
Alcohol.....fl.oz.	12
Oil of lavender flowers.....m.	30
Oil of bergamot.....m.	30
Color with alkanet if desired.	

II.

Glycerin.....fl.oz.	2
Alcohol.....fl.oz.	2
Orange flower water.....fl.oz.	2
Rose water.....fl.oz.	10
Oil of verben.....m.	30
Oil of rose geranium.....m.	30
Oil of citronella (best)....m.	30

HAIR DYES. (Mustache Dyes—Whisker Dyes.)

It is a common practice to dye faded or gray hair, or to, using a more polite expression, "restore" them, by the use of various liquid preparations. These may be made with mineral agents as the base but vegetable substances are used also and latterly synthetic agents have come into vogue.

Among the metallic substances used are silver, lead, bismuth, copper, nickel, mercury, etc., are used, any in fact which will form a black or brown compound in contact with a reagent. Silver is the most popular because it is most effective and most expeditious. Some of the metals are interdicted in Europe as being poisonous or deleterious, including copper, lead, mercury, nickel, and in some instances silver. Bismuth preparations are, however, entirely non-poisonous and may be used freely.

The vegetable dyes include walnut shells, henna leaves, and cashew nuts, but they are rather unsatisfactory as compared with the metallic dyes.

All metallic dyes require the use of a second or mordanting agent to "fix" the color such as pyrogalllic acid or a sulfite with silver, etc. Sometimes it is possible to combine the dye and mordant in one solution which then makes a so-called one-bottle preparation where-

as when the dye and mordant are separate, a two-bottle preparation is obtained.

All dyes must be renewed from time to time as the new portions of the hair of course, still retain the former color.

The usual color desired is black, although brown is also largely in demand. The dyes that produce a black color will produce a brown by appropriate weakening or dilution.

Before using any dye, the hair should be freed from grease by washing with an alkaline carbonate or soap, removing the latter by the abundant use of water, subsequently drying thoroughly.

The dye should be distributed among the hair by means of a tooth brush and occasional combing with a new comb; contact with the scalp should be avoided.

Silver Hair Dyes.

Silver dyes may be the so-called one-bottle or two-bottle preparations, the latter consisting of a bottle of mordant (pyrogallie or gallic acid or other agent) and a bottle of silver solution. The mordant is always applied to the hair first. In the case of one-bottle preparations, the single bottle is a solution of the silver salt. The mordanting or darkening effect is obtained by exposure of the hair to the sun. One bottle preparations do not make so good a color as the two-bottle ones.

I. Black or brown—2-bottle:

A.

Silver nitrate.....dr. 4
Ammonia water.....sufficient
Distilled water, to make....fl.oz. 4

Dissolve the silver nitrate in a portion of the water, gradually add ammonia water, stirring constantly, until the brown turbidity produced has vanished and the liquid appears colorless. then add the remainder of the water.

A large excess of ammonia should be avoided as this tends to produce a brownish dye.

B.

Pyrogallie acid.....dr. 1
Alcoholfl.dr. 4
Distilled water, to make....fl.oz. 4
Mix and dissolve.

Before using this dye the hair should be freed from grease by washing with warm water containing sodium or potassium carbonate, borax or soap, then well rinsed with clear water to remove all alkali, and finally dried thoroughly. In using, apply solution B to the hair with a clean tooth brush, going carefully over every portion of the hair, allow the latter to dry partially, then apply solution A in the same manner, using another clean tooth brush.

The above makes a black dye. To obtain a brown dye the solution of pyrogallie acid should be made very weak, about 20 grains to 4 ounces, and the solution of silver nitrate should also be reduced to one-half or one-quarter. In fact, any shade of color may be obtained by altering the strength of the solutions.

Care should be taken to avoid staining the scalp. If a stain is made, it may be removed with solution of sodium hyposulfite.

II. Black or brown—2-bottle:

A.

Silver nitrate.....dr. 4
Ammonia water.....sufficient
Distilled water, to make....fl.oz. 4

Dissolve the silver salt in a portion of the water, add ammonia water, in small amounts, with repeated agitation, to just redissolve the precipitate first formed, then add the remainder of the water.

B.

Gallic acid.....gr. 40
Waterfl.oz. 3
Alcoholfl.oz. 1
Mix and dissolve.

This is to be used like the preceding.

These combinations make a black dye. Brown or light may be obtained by using an excess of ammonia in solution A

or by diluting or weakening the solutions.

Use like No. I.

III. Black or brown—2-bottle:

A.

Silver nitrate.....dr. 4
Copper nitrate.....gr. 24
Ammonia water.....sufficient
Distilled water.....fl.oz. 4

Dissolve the two salts in the water, add ammonia water to redissolve the precipitate first formed.

B.

Pyrogallic acid.....dr. 2
Acetic acid.....fl.dr. 6
Alcoholfl.oz. 4½

Apply the pyrogallic solution to the hair with a tooth brush, taking care not to wet the scalp. When partially dry, apply the silver solution in the same manner, using another brush.

This makes a black dye. For a brown dye, decrease the amount of pyrogallic acid; as little as one-half grain to the fluidram is sometimes used. Sometimes the acetic acid is omitted, and in most of the commercial hair dyes diluted alcohol is used as a solvent of the acid. Copper sulfate might possibly be substituted for the nitrate.

The use of the copper salt is to avoid the dull reddish tint imparted to hair by the use of silver nitrate alone.

IV. Black—1-bottle:

Silver nitrate.....dr. 2
Ammonia water.....fl.oz. 1
Lard oil.....fl.dr. 4
Distilled water, to make...fl.oz. 8

Saponify the oil by shaking it with the ammonia water; dissolve the silver nitrate in the water, and add this to the oil solution. Let the mixture stand for some time with frequent agitation.

This liquid is to be applied to the hair by means of a tooth brush, being careful to apply it to all the hair and up to the roots, then loosen up or shake out the hair and expose to the sun which brings out the color. Age seems to improve the dyeing property of this preparation.

Bismuth Hair Dyes.

While hair dyes made with silver, copper, lead, mercury, nickel, etc., are considered poisonous and some are forbidden in European countries, bismuth dyes are known to be entirely harmless. The objection to them is that they do not operate so quickly and that the solutions decompose on exposure to light and air. They are also quite expensive. They should therefore be kept in dark bottles, well stoppered. They are preferred to make the light brown or so-called chestnut color.

V. Brown or blonde—1-bottle:

Bismuth subnitrate.....gr. 125
Solution of potassa, 10%.
Citric acid, each.....sufficient
Glycerinfl.oz. 3
Distilled or orange flower
water, to make.....fl.oz. 8

Mix the bismuth salt and glycerin intimately by trituration, then heat on a water-bath and gradually add to it solution of potassa, under constant stirring, until the bismuth salt is dissolved. Then add concentrated solution of citric acid until only a slight alkalinity remains. Now add water to make up the 8 fluidounces.

This is to be applied by means of a new tooth brush and comb.

Copper Hair Dyes.

Copper dyes are considered poisonous and in Germany and other European countries are forbidden for use on living hair. They may be used on wigs, switches, etc.

VI. Black—2-bottle:

A.

Copper sulfate.....gr. 80
Ammonia water.....m. 200
Distilled water.....fl.oz. 7½

B.

Pyrogallic acid.....gr. 35
Copper acetate.....gr. 175
Distilled water.....fl.oz. 7½
Apply like any of the silver dyes.

VII. Black—2-bottle:

A.

Copper sulfate.....dr. 2
Copper acetate.....dr. 2

Pyrogallic acid.....gr. 24
 Distilled water.....fl.oz. $9\frac{1}{2}$
 Ammonia water.....fl.dr. 4

B.

Potassium ferrocyanid....av.oz. 1
 Distilled water.....fl.oz. 10

Apply solution A thoroughly with a brush, allow the hair to dry spontaneously, then apply solution B in the same manner.

VIII. Brown—2-bottle:

A.

Copper chlorid.....gr. 80
 Distilled water.....fl.oz. 4

B.

Pyrogallic acid.....dr. 2
 Alcoholfl.oz. $3\frac{1}{2}$
 Distilled waterfl.oz. $4\frac{1}{2}$
 Apply like any of the silver dyes.

This makes a dark brown shade. A light brown shade may be made by decreasing the proportion of copper chlorid to 50 grains and that of pyrogallic acid to 80 grains.

Iron Hair Dyes.

Iron being entirely non-poisonous has been suggested as a basis for hair dyes instead of silver, lead, copper, or mercury. Iron dyes are, however, not as satisfactory as those containing silver or bismuth. Examples of iron dyes are here given.

IX. Black—2-bottle:

A.

Iron sulfate.....gr. 5
 Glycerinfl.dr. 4
 Distilled water, to make....fl.oz. 8

B.

Tannic acid.....gr. 20
 Gallic acid.....gr. 20
 Distilled water, to make....fl.oz. 8

The hair must be thoroughly washed with solution A, dried and brushed, once daily for three days; then solution B should be applied on a small-toothed comb, but must not be allowed to touch the skin if A has done so, else a temporary stain will result. Subsequently both liquids may be used once daily, at an interval of an hour or so, until a black color is produced.

X. Black—1-bottle:

Iron sulfate.....dr. 2
 Glycerinfl.oz. 1
 Cologne water.....fl.oz. 1
 Rose water.....fl.oz. 14

This is to be applied to the hair once or twice daily. It gradually darkens the hair.

Mercurial Hair Dye.

Owing to the poisonous character of mercury, this is to be used only on wigs, switches, etc., not on living hair.

XI. Black—2-bottle:

A.

Mercuric chlorid.....gr. 6
 Ammonium chlorid.....gr. 6
 Distilled water.....fl.oz. 3

B.

Sodium hyposulfate.....gr. 10
 Waterfl.oz. 2

The hair should be washed to free it from grease, then treated with solution A, allowed to dry, and then treated with solution B.

Lead Hair Dyes.

The lead dyes are considered poisonous and are usually not recommended. In fact some European countries have laws forbidding their use on human beings. For formulas for these preparations, see Lead and Sulfur Hair-Color Restorers under Hair Tonics.

Manganese Hair Dyes.

XII. Blonde—2-bottle:

A.

Potassium permanganate....gr. 80
 Distilled water.....fl.oz. 4

B.

Sodium hyposulfite.....gr. 80
 Distilled water.....fl.oz. 4

Free the hair from grease by washing with a weak soda solution, then rinse thoroughly with warm water, and dry well with a soft towel. Then apply solution A, with a soft, clean tooth brush, afterwards combing with a clean comb to evenly distribute the solution. After a short time, sponge the hair with clean water, then brush them with solution B until the manganese color is discharged.

Solution A is also used alone, the depth of color obtained varying with the frequency with which it is applied.

Pyrogallol Hair Dye.

Pyrogallic acid (pyrogallol) is also used without metallic combination to dye the hair. The following are some of the formulas recommended:

XIII.

Pyrogallic acid.....oz.	1
Alcohol	fl.oz. 2
Water	fl.oz. 6

This imparts to the hair a dark brown color. It is to be applied to the hair once daily until the desired shade is obtained.

XIV.

Pyrogallic acid.....dr.	4
Solution of potassa.....dr.	4
Water, to make.....fl.oz.	6

This makes a brown color. It is to be used like the preceding.

Walnut Hair Oil and Dye.

Oils impregnated with the coloring principles of walnut shells have been recommended for dyeing the hair, thus serving as a combined oil and dye. The oil is to be applied daily, the hair acquiring a dark brown tint. The following are the best formulas:

XV.

Paraffin oil.....fl.oz.	16
Alum, powder.....dr.	4
Walnut shells, dried.....av.oz.	4
Alcohol	sufficient
Perfume.....	to suit

Moisten the shells with alcohol, add the alum and paraffin oil, heat on a sand bath for an hour, then filter, and finally add any desired essential oils or synthetic perfumes.

XVI.

Walnut shells, green or fresh	av.oz. 3
Alum, powder.....dr.	3
Olive oil	fl.oz. 16
Oil of rose.....drops	15
Oil of bergamot.....drops	25

Beat the walnut shells in a mortar with the alum, then heat with the olive oil until all moisture has dissipated,

filter, allow to cool, and add the aromatic oils.

XVII. Many of the so-called "walnut dyes" are not made from walnut shells at all, but are chemical origin, the following being given as an example:

Silver nitrate.....gr.	45
Pyrogallic acid.....dr.	3
Distilled water.....fl.oz.	2
Glycerin	fl.oz. 6

Henna Hair Dye.

The leaves of the henna, a Southern Asiatic plant, have long been used by Oriental women as a dye for the hair and finger nails. One method of using the leaves is to make a decoction with boiling water in about the proportion of 1 in 7, and to apply this uniformly to the hair, after first washing the latter to remove all grease. Owing to the gummy character of the leaves, the hair becomes disagreeably sticky after making the application. The decoction spoils readily but may be preserved for some time by adding about 20% of alcohol, which also precipitates a portion of the gum. The leaves may also be extracted with diluted alcohol, and this tincture is also suitable as a dye.

This dye is entirely harmless and may be used in any amount, but must not be used so freely as to stain the skin. It imparts to the hair a dark brown or black color which is quite lasting.

It is also used in the form of a powder which is mixed with water and applied to the hair in the form of a paste. This is allowed to remain over night, and is washed off the next day with water.

Oriental women are said to use henna leaves in connection with the leaves of the indigo plant, known as "reng." The color may be varied by using different proportions of reng and henna, the more of the former that is used, the darker will be the shade produced.

Synthetic Hair Dyes.

A number of substances or combinations of substances, of synthetic origin,

most of them similar to photographic developers, have been recommended of late years for dyeing hair. As a rule most of them are irritant to the skin and produce eczemas and other cutaneous eruptions. They are therefore suitable only for dyeing furs, wigs, switches, etc. One of the chemicals most frequently mentioned in this connection is paraphenylenediamine. According to the specifications of a German patent it is to be used as follows:

A.

Paraphenylenediamine ..parts	20
Caustic soda.....parts	14
Water	1000

B.

Hydrogen dioxid.....parts	3
Water	100

Cleanse the hair thoroughly so as to remove all fatty matter, then apply solution A, allow the hair to dry partially, and then apply solution B. In the course of the day the hair assumes a dark color, which becomes deeper upon repeated applications of the dye.

The preparation known as Aureol, also protected by a German patent, consists of

Metal	10
Amidophenol hydrochlorid	3
Monamidophenylamine ..parts	6
Sodium sulfite.....parts	5
Diluted alcohol, to make.....parts	1000

Dissolve the sulfite in the alcohol and all the other ingredients.

In using this dye the hair should first be washed with soda solution or soap, rinse thoroughly with clear water, allowed to dry partially, then with a fine-tooth comb apply this liquid previously mixed with an equal proportion of a 3% solution of hydrogen peroxid. In the course of 2 or 3 hours the hair will assume a dark-brown color which can be increased to black by repeated applications of the dye.

A German patent has also been issued for a hair dye which is said to be "relatively" non-poisonous and which

does not irritate the skin. The hair is first treated with a dilute alcoholic, slightly alkaline solution of naphthylendiamine, and then washed with an oxidizing solution. The result is a blonde or light brown tint, which resists the influence of light, or water and of the substances ordinarily used in washing the hair.

Golden Hair Coloring.

To bleach the hair, hydrogen peroxid only is used at the present time. Before using it the hair should be freed from grease and dirt by washing thoroughly with soap and water containing a small amount of ammonia water. Dry the hair partially, then apply the peroxid by means of a sponge or in any other convenient manner. Comb the hair out so as to distribute the bleach evenly through the hair and to expose the latter quite thoroughly to the air. If the shade obtained is not light enough, repeat once daily for several days till the desired tint is obtained. The color obtained depends not only upon the frequency with which the bleach is used but also upon the constitution of the hair, to which also the natural color of the hair is due. Red hair is but little affected by the bleach because of the small proportion of iron present; black hair is affected the most.

Hair Dye in Ointment Form.

According to Gawaloski, an effective hair dye may be made by washing freshly precipitated silver oxid with alcohol, and making this into an ointment with any suitable vehicle. This ointment is to be rubbed into the hair at night, and in the morning washed out with a weak alcoholic solution of pyrogallie acid and potassa. After a few minutes exposure to the light, wash the hair with water, and apply a little oil.

BRILLIANTINES.

These are preparations intended for application to the mustache, beard or to make them appear glossy. They are therefore similar to the preparations

called Hair Glosses, which see. They consist of a mixture of alcohol, fixed oils or glycerin (or both together), and some perfuming agent. There are two varieties, the separating and the non-separating, the former separating on standing into two layers. The cause of the separation is the presence of fixed oil other than castor oil which is not soluble in alcohol or alcoholic liquids; the presence of glycerin and possibly of water also contribute to the separation. The non-separating kind consists of castor oil or glycerin in alcoholic solution.

The perfume is an important consideration. It may be any suitable combination of essential oils or synthetic perfumes. The formulas under Perfumes for Hair Oils are excellent for this purpose. Or instead of alcohol and essential oils in the mixture, a good handkerchief extract may be used. Too much perfume in the mixture is undesirable.

If a colored preparation is desired, it may be tinted yellow with tincture of saffron or curcuma or reddish with alkanet root of alkannin.

I.

Castor oil.....	fl.oz.	1
Sweet almond oil.....	fl.oz.	7
Glycerin	fl.dr.	3
Jockey club extract.....	fl.dr.	6
Alcohol, to make.....	fl.oz.	16

II.

Sweet almond oil.....	fl.oz.	9
Alcohol	fl.oz.	5
Glycerin	fl.oz.	2
Oil of rose geranium.....	drops	15

III.

Castor oil.....	fl.oz.	6
Alcohol	fl.oz.	10
Oil of rose.....	drops	20
Oil of neroli.....	drops	20

Mix, and color with tincture of saffron or curcuma.

IV. This preparation is more like a pomatum:

Castor oil.....	av.oz.	15
Spermaceti	av.oz.	4
Oil of bergamot.....	fl.dr.	2

Palmarosa oil.....	fl.dr.	1
Geranyl acetate.....	m.	30

Melt the spermaceti, add the castor oil, allow to cool somewhat, and then incorporate the perfume.

V. The "huiles antiques" imported from France may be made into fine brilliantines by mixing them with an equal proportion of alcohol.

STICK MUSTACHE POMADE.

(Stick Pomatum—Cosmetique.)

For a formula suitable as a basis for these preparations see under Grease Paints. The fatty combination mentioned when uncolored forms white cosmetic, when colored with burnt umber, brown cosmetics, and when colored with lampblack or animal charcoal, black cosmetic. The coloring matter should be rubbed to a perfectly smooth paste before adding to the remainder of the fatty matter. The mixture may be colored mildly with any suitable essential oil or synthetic perfume, or with any of the combinations mentioned under Perfumes for Hair Oils.

After the mixture has been melted and colored and perfumed if desired, it should be allowed to cool to near the congealing point, and then poured into well-chilled molds of the proper dimensions. After the sticks have solidified, they should be removed from the molds, and wrapped in oiled paper or tin-foil, after which they may be enclosed in a fancy wrapper.

Instead of a portion of the fatty matter and then adding perfume, flower pomades may be used as in the following:

White wax.....	av.oz.	8
Suet	av.oz.	8
Tuberose pomade.....	av.oz.	4
Jasmine pomade.....	av.oz.	4

First melt the wax, then add the suet, afterward the pomades.

The following is also recommended as a basis for mustache pomades:

Spermaceti	av.oz.	1
White or yellow wax.....	av.oz.	7
Olive oil.....	fl. or av.oz.	9

Melt the wax and spermaceti and add

the oil. The coloring matter and perfume may be added as before. For the white pomade use white wax, but for colored pomades yellow wax may be used.

HUNGARIAN MUSTACHE POMADE. (Hungarian Mustache Wax—Pommade Hongroise.)

This is a mixture of gum, soap, wax or spermaceti, and water, with perfume and coloring matter. It is in the form of a sticky or tenacious paste which, when applied to the end of the mustache, retains the latter in extended fashion, à la Napoleon III.

It may be left uncolored, or it may be colored brown with umber or black with lampblack like stick mustache, the coloring matter being first rubbed up with a portion of melted wax or the glycerin or water before adding to the other ingredients.

Owing to the fact that it will become hard and dry when exposed to the atmosphere, it must be preserved and dispensed in well-stoppered wide-mouth bottles or in collapsible tubes.

I.

Spermaceti	dr. 2
White or yellow wax.....	av.oz. 2½
Acacia, powder.....	av.oz. 2
White castile soap, powder.....	av.oz. 1¼
Glycerin	fl.dr. 2
Water	fl.oz. 6
Oil of bergamot.....	m. 30
Oil of rose geranium.....	m. 30

Rub the soap and gum with half the water, previously warmed, to a perfectly smooth paste. Melt the wax and spermaceti, add the remainder of the water, then incorporate the soap and gum mixture, and the glycerin, adding these gradually with constant stirring. Then allow the whole to cool partially before adding the oils.

White wax is to be used for white or light-colored pomade, while yellow wax may be used for dark pomade.

II.

White castile soap, powder.....	av.oz. 2
White wax.....	av.oz. 5
Mucilage of acacia.....	fl.oz. 6

Water	fl.oz. 5
Glycerin	fl.oz. 1½
Oil of bergamot.....	drops 12
Oil of lemon.....	drops 6
Oil of rose.....	drops 6

Triturate the soap with the mucilage previously mixed with the water to a smooth paste. To this add the wax and glycerin, heat the whole on a water bath, stirring constantly, until the wax is melted, and the mixture is homogeneous. Now, incorporate the volatile oils, also coloring matter, if a colored pomade is desired.

III. This is a Hungarian formula:

White wax.....	av.oz. 9½
Lard	av.oz. 3¼
Venice turpentine	av.oz. 3¼
Gum elemi.....	av.oz. 1

Melt together at a gentle heat and stir until cool.

MUSTACHE VARNISH.

The following is recommended for imparting stiffness to the mustache and beard:

Mastic	dr. 2
Sandarac	dr. 4
Resin	av.oz. 1½
Alcohol	fl.oz. 4
Ether	fl.dr. 4
Any perfume extract.....	fl.dr. 4

Mix and agitate until the resins are practically dissolved, then strain. Some castor oil may be added.

SPIRIT GUM for Attaching False Beards and Mustaches.

This is generally a resinous preparation such as an alcoholic solution of mastic or an ethereal solution of sandarac. Or the following may be used:

I.

Mastic	dr. 1
Sandarac	dr. 2
Rosin	dr. 6
Ether	fl.dr. 2
Alcohol	fl.oz. 2

Mix and dissolve by agitation.

II.

Rosin	dr. 4
Castor oil.....	fl.dr. 2
Alcohol	fl.dr. 10
Volatile oil.....	to perfume

Mix and dissolve by agitation.

EYE-BROW PENCILS.

For full directions for making eye-brow pencils, see under Grease Paints in Chapter II.

SHAVING PREPARATIONS.

Two kinds are described here, shaving creams and shaving powders. The manufacture of soaps requires special ability and experience and will not be discussed.

Creams or Pastes.

These are merely soft soaps and also require the special ability of a soap-maker to prepare them. The following formulas are well recommended:

I. Modified from Piesse:

Lard	av.oz. 14
Caustic potassa.....	av.oz. 2
Water	fl.oz. 6
Perfume	to suit

Melt the lard in a porcelain vessel over a salt water bath; dissolve the potassa in the water, and run the lye, thus formed, very slowly into the melted grease, stirring thoroughly all the time, until saponification is complete.

A pearly appearance can be given to the "cream," which is simply a soft soap, by long trituration in a mortar with a little alcohol, say 4 fluidrams to each pound of soap.

Bitter almond oil may be used as a perfume for the "cream." Only a very minute proportion is required. A few drops dissolved in the alcohol used as above will suffice.

Glycerin should be added to this cream to retain it in a permanently soft condition.

II. From Dieterich:

Mutton tallow.....	av.oz. 8
Cocoonut oil.....	av.oz. 4
Solution of soda,	
sp. gr. 1.26.....	av.oz. 6¾
Solution of potassa,	
sp. gr. 1.26.....	av.oz. 1¼
Oil of bergamot.....	m. 80
Oil of caraway.....	m. 60
Oil of lavender flowers...	m. 40
Oil of thyme, white.....	m. 20

Melt the tallow and oil together, cool to 50° C., add the alkaline solutions, and continue a gentle heat, stirring con-

stantly for about half an hour or until the mass is homogeneous; then incorporate the essential oils.

III.

Lard	av.oz. 16
Spermaceti	av.oz. 1
Caustic potash.....	av.oz. 2
Water	fl.oz. 16
Perfume	to suit

Melt the lard and spermaceti, dissolve the potash in half the water, and gradually add this solution to the melted fat, constantly stirring meanwhile. Then incorporate the remainder of the water which has previously been warmed, and finally add any desired perfume ("extract," oil or synthetic), which may be dissolved in a small amount of alcohol.

This is similar to No. I but is somewhat softer. Less water may be used if desired.

IV.

Lard	av.oz. 15
Benne oil.....	av.oz. 3
Solution of caustic potash,	
sp. gr. 1.384.....	av.oz. 7
Solution of caustic soda,	
sp. gr. 1.384.....	av.oz. 1½
Water	fl.dr. 4
Perfume	to suit

Melt the lard, add the oil, and keep the mixture at a temperature of about 38° C. throughout the operation. Keep the fatty mixture in constant motion and to it gradually, first the soda solution, then the potash solution, and then the water. When saponification is completed, allow the mass to cool somewhat, and then incorporate any desired perfume ("extract," oil, or synthetic) which may be first dissolved in a small amount of alcohol.

Powders.**V.**

Soap, powder.....	av.oz. 9
Starch	av.oz. 1½
Sodium carbonate.....	av.oz. 1
Orris root, powder.....	av.oz. ½
Oil of bergamot.....	drops 20

The orris root may be replaced by powdered soap bark and a very little oil of orris may be added.

VI.

Soap, powder.....	av.oz. 10
Spermaceti, powder.....	gr. 75
Cumarin	gr. 1
Oil of wintergreen.....	drop 1
Oil of bergamot.....	drops 3

Mix thoroughly.

DEPILATORIES. (Hair Removers.)

Depilatories are preparations for removing hair. They are usually in the form of powder, which should be in impalpable condition. The main or active ingredient is usually sulfid or sulfhydrate of one of the alkalies or alkaline earths, although the older depilatories were made with caustic alkalies. In using these depilatories they should be made into thin paste with water, applied in a thin layer to the skin, allowed to remain a few minutes and then scraped off with a blunt instrument, when the hair will have softened sufficiently to remove without pain.

All these preparations give out the disagreeable odor of sulfuretted hydrogen, strontium sulfid least so. These preparations readily lose sulfid and unless tolerably fresh they are of little value for the removal of hair.

Too long contact of depilatories with the skin should be avoided, as they are liable to cause erosions and even ugly sores. To avoid any bad after-effect, the skin should be thoroughly cleansed and then anointed with a bland oil.

These preparations are used mainly for ladies for the removal of hair from the face. In the Orient women use them also to remove hair from other portions of the body as the axillæ and pubis. The longer hair should be cut off with a scissors before applying the depilatory.

Besides the sulfids, other preparations are used as depilatories, such as iodine in combination with collodion or sodium ethylate but the sulfids are the safest and most satisfactory for ordinary use.

I. Prepare sulfuretted baryta (barium sulfid) by making heavy spar (natural barium sulfate) and charcoal into

a stiff paste by means of linseed oil, forming this mass into cylindrical rolls and subjecting it in a crucible to the heat of a coal fire. The dark gray coke, after pulverizing, is then made up as follows:

Crude sulfuretted baryta..	parts 2
Zinc oxid.....	part 1
Starch	part 1

With the aid of water this powder is converted into a soft paste and applied to a hairy skin in a layer as thick as a straw. After drying (about ten minutes), the pellicle is scraped off with a paper knife, or similar blunt instrument, and with it the hair. The face should be washed clean and anointed with some bland oil.

Ordinary barium sulfid may be used in place of the sulfuretted baryta. The zinc oxid may be omitted if desired.

II. Another method of using barium sulfid is as follows:

Barium sulfid.....	dr. 5
Soap, powder.....	dr. 1
Talcum	dr. 7
Wheat flour.....	dr. 7

In using, mix one teaspoonful of the powder into a paste with 3 teaspoonfuls of water, and apply to the parts with an ordinary shaving brush in a moderately thick and even layer. After four or five minutes the parts should be moistened with a sponge, when after another five minutes, the hair can be removed by washing off the mass.

For the success of a depilatory powder containing barium sulfid it is highly important that the sulfid be as fresh as possible and it must not have become oxidized by exposure to air.

III. Calcium sulfid, also used as a depilatory, may be made by heating a mixture of 10 parts of finely powdered lime with 9 parts of sulfur, contained in a crucible, to a low red heat. Then mix as follows:

Calcium sulfid (prepared as above)	parts 2
Zinc oxid.....	part 1
Starch	part 1

Reduce all to fine powder and mix

well. A small amount of aromatic oils, such as lemon and peppermint, may be incorporated with this powder to disguise its odor. This should be kept in well-stoppered bottles, as like other sulfids, it is readily decomposed by the atmosphere.

In using this make a paste with water, apply lightly to the skin, leave for about 10 minutes, then remove with water.

IV. Calcium sulfhydrate is prepared for use as a depilatory in the following manner: Take 2 parts of freshly-slaked lime from which the gritty particles have been removed and mix it with 3 parts of water. Through this pass a stream of sulfuretted hydrogen which may be made in the usual manner, i. e., from iron sulfid and sulfuric acid. A pasty, bluish-green mixture is obtained which is non-caustic and serves well as a depilatory. It should be preserved in wide-mouthed amber-colored, well-stoppered bottles as the carbon dioxid of the air decomposes it quickly. It is to be applied in a thin layer to the skin by means of a satpula or spoon handle. After 5 minutes, remove it with the aid of tepid water and a towel, using gentle friction.

This preparation is practically the same as the one known as Boettger's and Martin's depilatory.

V. According to the specifications of a German patent, sulfuretted calcium may be employed in this form: Make a mixture of hydrated lime with a 5 to 25% sugar solution and into this pass a stream of sulfuretted hydrogen. If properly prepared an almost dry mass is obtained which should be mixed with talcum so that the mixture contains 4 to 6% of sulfid. In using, make into a paste with water, apply this lightly to the skin, allow to remain for 5 or 10 minutes, then remove by washing gently with water.

VI. Another sulfid used by Oriental

women is orpiment or arsenic sulfid in the following form:

Quicklime	parts 10
Starch	parts 6
Orpiment	part 1

This is to be mixed into paste with water and applied like the preceding preparations.

VII. Another form of depilatory is the following:

Tincture of turpentine.....	m. 50
Oil of turpentine.....	m. 100
Castor oil.....	f.dr. 2
Alcohol	f.dr. 5
Collodion, to make.....	f.oz. 4

In using, apply daily for several days, after which the film is removed, bringing the hair with it without causing pain.

VIII. Sodium ethylate solution is also advised as a depilatory but it is so caustic in action that the greatest care should be exercised in its use and then it had best be used under the direction of a physician. The method of preparing it according to the British Pharmacopœia is as follows:

Metallic sodium, clean	
and bright.....	gr. 23
Absolute alcohol	f.oz. 1

Cautiously dissolve the sodium in the alcohol contained in a flask, the latter being kept cool by a stream of cold water.

The sodium must be added in very small bits.

The solution should be recently prepared, as it attracts moisture from the air which decomposes it.

IX. Still another depilatory is Unna's Depilating Stick which is made by fusing 9 parts of rosin with 1 of beeswax. These are used like sealing wax; one end is softened by heat (but not hot enough to burn the skin) and is pressed gently upon the hairy skin and when cooled is jerked away, bringing the hairs with it.

CHAPTER IV.

TOOTH AND MOUTH PREPARATIONS.

Tooth preparations or dentifrices include powders, creams, pastes, soaps and liquids. These will be considered in detail under the appropriate headings.

TOOTH POWDERS.

The customary ingredients are chalk (usually precipitated, sometimes prepared), orris root, myrrh, cuttle-fish bone, pumice stone, sodium bicarbonate, magnesium carbonate, soap, sugar, saccharin, menthol, eucalyptol, thymol, and other antiseptics, essential oils, coloring matters, etc. All the solids must be reduced to very fine powder, must be mixed intimately together and with the liquid ingredients (volatile oils, carbolic acid, etc.), and the whole must be sifted through a very fine sieve. It will be of advantage to pass the powder repeatedly through the sieve.

The principal ingredient, the one that usually forms the bulk of the product, is precipitated chalk. This acts as an abrasive or cleansing and polishing agent and is assisted in this action by cuttle-fish bone or pumice stone if these are present. These latter two substances are considered too gritty for use in tooth preparations and are now usually omitted. Even precipitated chalk, on account of its crystalline character, is considered by some dentists as being too harsh on the tooth enamel and is frequently replaced by prepared chalk, which is soft and amorphous. Other substances now used as substitutes for precipitated chalk are sugar of milk and kieselguhr, as well as other white or light-colored clays. Sugar of milk is the basis of the so-called soluble tooth powders. Kieselguhr and other clays are the most modern ingredients of tooth powders, and when purchased in fairly large quantities are cheaper even than chalk.

Soap is another important ingredient of tooth powders and may be present to

the extent of 5 to 20%. It causes the powder to foam during use and adds to the detergent properties of the combination, hence it is seldom omitted.

Magnesium carbonate is sometimes added to tooth powders in the proportion of 1 to 5% to impart lightness and bulk but is not really necessary.

Sodium bicarbonate is added in small amounts to powders to increase the alkalinity. It is a mild soluble alkali, rendering the secretions of the mouth temporarily alkaline and thus warding off the deposition of tartar. However, chalk and magnesium carbonate are sufficiently alkaline and sodium bicarbonate does not add to the pleasant taste of the powder. The same remarks will also apply to the use of borax in tooth powders, although this substance is more agreeable to the taste.

Sugar and saccharin are used as sweetening agents. The former is objected to as being fermentable and if left in the teeth may set up a fermentation. Saccharin is not so pleasant a sweetener but it is strongly antiseptic. It may be used in the proportion of about 1/10%. Milk sugar has also been recommended as a sweetening agent instead of cane sugar.

Charcoal was formerly a favorite ingredient of tooth powders on account of supposed deodorant properties but it acts too harshly on the tooth enamel and is now usually omitted. It frequently lodged between the teeth and discolored them. It was also objectionable on account of the color of the powder obtained.

Orris root is a favorite ingredient of tooth powders. It is pleasant in taste and it aids in disguising the taste of the soap and chalk.

Myrrh was formerly largely used in tooth powders but its taste is not agreeable.

Acids, except boracic, carbolic or salicylic acid, should never be used in tooth powders or other tooth preparations, notwithstanding that formulas for acid

tooth powders have been published and have even been recognized by pharmacopias.

Tannin or tannin-containing drugs is sometimes added in small amount to powders for the astringent action on the gums.

Tooth powders are frequently colored though just as often they are left uncolored, provided they are white or nearly so. They are often colored a rose tint by the addition of 10 to 20 grains of carmine to the pound. This should be rubbed to a fine powder with the sugar or other gritty ingredient or, in the absence of this, with a small portion of the chalk, before adding the other ingredients. Or the carmine may be rubbed to a paste with ammonia water, then incorporated with the remaining ingredients, in the meantime allowing the ammonia to evaporate. Tooth powders may also be colored a rose or pink tint with Armenian bole or rose pink. They may also be colored other tints, such as green with chlorophyll. In the formulas given in this book the coloring matter may be added or it may be omitted, as may be desired.

Among the antiseptic substances used in tooth powders are boracic acid, thymol, menthol, salol, eucalyptol, betanaphthol, camphor, carbolic acid, and flavoring oils. The boracic acid, thymol, salol, menthol and camphor should be in very fine powder before being incorporated with the other ingredients and they should be mixed intimately with the latter. Intimate mixture will also apply to the carbolic acid and other liquids.

The substances used for flavoring purposes should include the essential oils used for flavoring purposes rather than the ones for perfumes, such as oils of wintergreen, peppermint, cassia, lemon, orange, clove, sassafras, rose, etc. The favorites are wintergreen, peppermint and cassia, but more particularly the first two. Enough of these should be used to leave a pungent, cooling and

cleanly feeling in the mouth, say about 2 to 4 fluidrams of peppermint or wintergreen oil to the pound or about one-half as much oil of cassia as this is more pungent. Camphor, carbolic acid, menthol, thymol, eucalyptol, orris and myrrh are also to be ranked as flavors. Combinations of different oils are frequently used. In the formulas given below the flavors may be changed to suit.

The most modern ingredients of tooth powders are the oxygen-yielding compounds including sodium perborate and calcium and magnesium peroxides. Calcium peroxid is known by the names calox and gorite. These substances are added to tooth powders in the proportion of 2 to 4%, otherwise the tooth powder is compounded in the usual manner. These powders when moistened with water yield hydrogen peroxid, which of course readily parts with its oxygen and acts as a bleaching agent and disinfectant. These powders are therefore especially valuable when the teeth are discolored from decay or from smoking, restoring them to their original whiteness and stopping the decay.

The name given varies according to composition and according to the fancy of the maker. It may be called "myrrh tooth powder," "saponaceous tooth powder," "camphorated tooth powder," "charcoal tooth powder," "thymol tooth powder," "carbolated tooth powder," "coral tooth powder," "pearl tooth powder," "rose tooth powder," "antiseptic tooth powder," "salol tooth powder," "violet tooth powder," "aromatic tooth powder," "Imperial tooth powder," "crown tooth powder," etc. In each case, the word "dentifrice" may be substituted for "tooth powder."

The name should be one easily remembered. The container should be attractive and of such a form or shape that the preparation is of easy access. The label should be plain, not crowded, as everybody has a knowledge of the uses of a tooth preparation.

I.

Precipitated chalkav.oz. 16
 Oil of peppermint,
 Oil of wintergreen, each...sufficient
 About 2 to 4 fluidrams of the oils are required, to suit individual tastes, or one of the oils alone may be used. Mix well and sift.

II.

Precipitated chalkav.oz. 12
 Orris root, powder.....av.oz. 4
 Oils of orange and cardamom, eachsufficient
 Mix well. Use about 2 fluidrams of oil of orange and 15 drops of oil of cardamom. Or the two oils may be replaced by oils of wintergreen or peppermint.

III.

Precipitated chalkav.oz. 16
 Orris root, powder.....av.oz. 3
 Cuttle-bone, powderav.oz. 2
 White castile soap, powder.av.oz. 2
 Magnesium carbonateav.oz. $\frac{1}{2}$
 Oil of rose.....drops 16
 Oil of wintergreen.....drops 8
 Oil of peppermint.....drops 8

IV.

Precipitated chalkav.oz. 16
 White castile soap.....av.oz. 1
 Licorice rootav.oz. 1
 Magnesium carbonateav.oz. 1
 Reduce the soap and licorice root to fine powder and incorporate the other ingredients. Flavor as desired; it may also be colored with carmine. Licorice root is the sweetening agent instead of sugar or saccharin.

V.

Precipitated chalkav.oz. 22
 Sugar of milk.....av.oz. 6
 Orris rootav.oz. 2
 White castile soap.....av.oz. 1
 Carminegr. 15
 Oil of wintergreen.....fl.dr. 1
 Oil of cassia.....m. 30
 Triturate the carmine with the sugar of milk until well mixed, incorporate the other ingredients, and sift the whole.

VI.

Precipitated chalkav.oz. 30
 White castile soap, powder.av.oz. 4
 Sodium bicarbonateav.oz. 2
 Oil of peppermint.....fl.dr. 1

Oil of anise.....fl.dr. 1
 Oil of eucalyptus.....fl.dr. 1

VII.

Precipitated chalkav.oz. 12
 White castile soap, powder.av.oz. 1
 Betanaphtholdr. 1
 Saccharingr. 2 to 5
 Oil of rose.....drops 15
 Musk extractdrops 10

In this powder, betanaphthol is the main antiseptic. It is odorless and leaves a pleasantly pungent taste in the mouth.

VIII. Formula of the Swedish Pharmacopeia:

Calcium carbonateav.oz. 10 $\frac{1}{2}$
 Magnesium carbonateav.oz. 1
 Borax, powderav.oz. 1
 Oil of peppermint.....fl.dr. 1
 Mix well, and sift.

IX. Culley's formula:

Sugar of milk.....av.lb. 2
 Oil of Ceylon cinnamon.....m. 5
 Oil of eucalyptus.....m. 5
 Oil of wintergreen.....m. 20
 Oil of peppermint.....m. 45
 This powder is entirely soluble.

X. Mme. Que Vive's formula:

Precipitated chalkav.oz. 12
 Orris rootav.oz. 2
 White castile soap.....av.oz. 1
 Sugarav.oz. 1
 Oil of wintergreen.....fl.dr. 1

The following is also advised:

Prepared chalk, finely powderedav.oz. 8
 Castile soap, powder.....av.oz. 1 $\frac{1}{2}$
 Orris root, powder.....av.oz. 2
 Sugarav.oz. 2
 Oil of sassafras.....fl.dr. 1

Antiseptic Tooth Powder.

XI. All tooth powders mentioned here are antiseptic in character but the name is particularly appropriate for this one because containing the well-known antiseptic ingredients of Antiseptic Solution of the U. S. P.:

Precipitated chalkav.oz. 16
 White castile soap, powder.av.oz. 1
 Borax, powderdr. 3
 Thymolgr. 20
 Mentholgr. 20
 Eucalyptolgr. 20
 Oil of wintergreen.....m. 20

Rub the thymol and menthol with the oil and eucalyptol until liquefied, add the other ingredients, mix well, and sift.

Aromatic Tooth Powder.

XII. Any of the powders for which formulas are contained herein are aromatized but the following is different from others:

Prepared or precipitated

chalk	av.oz. 12
Armenian bole	av.oz. 1
Cardamom	dr. 2
Orris	dr. 2
Clove	dr. 2
Cassia	dr. 2
Oil of wintergreen.....	m. 30

Reduce the cardamom, orris, clove and cassia to fine powder, incorporate the other ingredients, mix well, and sift.

Camphorated Tooth Powder.

Any of the preceding tooth powders may be converted into a camphorated powder by replacing the oils or other flavoring substances with camphor gum. This should be reduced to fine powder by trituration in a mortar, first moistening with a few drops of alcohol or chloroform, then incorporating the other ingredients, mixing thoroughly, and finally passing through a fine sieve. The following formulas may also be used:

XIII.

Precipitated chalk	av.oz. 16
White castile soap, powder.....	av.oz. 2
Camphor	dr. 3
Eucalyptol	m. 20
Oil of orange.....	m. 15
Oil of peppermint.....	m. 10
Oil of cinnamon.....	m. 10

XIV.

Precipitated chalk	av.oz. 24
White castile soap.....	av.oz. 3
Camphor	av.oz. 1
Myrrh	av.oz. ½
Oil of peppermint.....	fl.oz. 1

Mix all in fine powder like the preceding, and sift.

Carbolated Tooth Powder.

This may be made like camphorated tooth powder, adding about 2 fluidrams of liquefied carbolic acid to the pound of powder. As an antiseptic in tooth powders, carbolic acid is no longer esteemed, there being so many other better ones, and its taste is objectionable.

Charcoal Tooth Powder.**XV.**

Orris root	av.oz. 5
Myrrh	av.oz. 5
Charcoal	av.oz. 11
Precipitated chalk	av.oz. 11

All should be in a very fine powder and the whole should be well mixed and finally passed through a fine sieve.

Hunter's (John) Tooth Powder.**XVI.**

Cream of tartar.....	av.oz. 12
Alum	av.oz. 2¼
Cochineal	av.oz. 2
Cinnamon	av.oz. 1
Sugar	av.oz. 4

Mix all, reducing to fine powder, and sift.

Marshall's or Hudson's Dentifrice.**XVII.**

Prepared chalk	av.oz. 12
Myrrh, powder	av.oz. 4
Orris, powder	av.oz. 4
Rose pink	av.oz. ¼

Mix well, reduce to fine powder, and sift.

Mialhe's Tooth Powder.**XVIII.**

Sugar of milk.....	av.oz. 18
Tannin	dr. 2
Rose pink	gr. 80
Oil of peppermint,	
Oil of anise,	
Oil of neroli, each, enough to	
flavor suitably.	

Myrrh Tooth Powder.

XIX. Myrrh is highly esteemed by some as an ingredient in tooth powders but is objected to on account of its after-taste. Ordinary salt disguises the taste and is itself an excellent ingredient of tooth powders.

Myrrh	dr. 2½
Sodium chlorid	dr. 2½
White castile soap.....	dr. 1½
Precipitated chalk	av.oz. 16
Oil of rose, enough to flavor.	

Oxygenated Tooth Powder.

As stated in the preliminary remarks, oxygen-yielding substances, such as sodium perborate or calcium or magnesium peroxid are added to tooth powders for their bleaching and disinfecting properties. On contact with water, hy-

drogen dioxid is formed, and then oxygen is liberated in the nascent form. These substances may be added to the preceding powders in the proportion of about 4 to 6%, or the following formulas may be used:

XX. Formula of the British Pharmaceutical Codex:

Precipitated chalkav.oz.	17½
Magnesium peroxidav.oz.	2
Powdered soapav.oz.	½
Mentholgr.	18
Oil of rosem.	45
Oil of wintergreenm.	90

Triturate the menthol with the oils, then with a small portion of the chalk, add the remaining ingredients, mix well, and sift.

XXI.

Precipitated chalkav.oz.	12
Sodium perborateav.oz.	1
White castile soap, powder	av.oz.	1
Oil of wintergreenfl.dr.	2

Sodium perborate is not so well adapted for these preparations as calcium or magnesium peroxid.

Potassium Chlorate Tooth Powder.

XXII. Unna recommends the use of potassium chlorate for the teeth, especially in the form of paste. The following powders also contain it:

Corn mealav.oz.	10
Potassium chlorateav.oz.	1½
Boraxav.oz.	1
Oil of wintergreenm.	20
Oil of peppermintm.	20

All the ingredients should be in very fine powder before mixing. Then triturate the borax and the oils with about half the corn meal until well mixed; on a paper, lightly mix the potassium chlorate with the remainder of the corn meal by means of a wooden or horn spatula. Carefully mix the whole together and pass through a fine sieve.

The silica in the seed-coats of the corn acts as an abrasive. Either white or yellow corn meal may be used but the former is of course to be preferred.

Quinine Tooth Powder.

XXIII.

Precipitated chalkav.oz.	8
Orris rootav.oz.	1

Sugar of milkav.oz.	1
Pumice stonedr.	2
Magnesium carbonatedr.	2
Tannic aciddr.	1½
Quinine hydrochloridgr.	20
Oil of peppermintdrops	20
Oil of rosedrops	4
Oil of ylang ylangdrop	1
Oil of bitter almonddrop	1
Saccharingr.	1

Mix all, and reduce to a fine, uniform powder.

This is an example of a formula common in German formularies.

Rose Tooth Powder.

So-called "rose tooth powders" should be flavored with oil of rose and tinted a rose color with carmine, as in the following:

XXIV.

Prepared or precipitated chalkav.oz.	15
Sugar of milkav.oz.	5
Orris root, powderav.oz.	1
Carminegr.	10
Oil of rose, natural or syntheticdrops	10

Triturate the carmine to an impalpable condition with a small portion of the sugar of milk, then add the other ingredients, mix well, and sift.

Salicylated Tooth Powder.

XXV.

Precipitated chalkav.oz.	10½
Sodium bicarbonateav.oz.	2½
Sodium salicylatedr.	1½
Orris rootav.oz.	2
Licorice rootav.oz.	1½
White castile soapav.oz.	1
Myrrhav.oz.	½
Oil of wintergreendrops	20
Oil of rose geraniumdrops	2

Reduce all the solids to fine powder and mix well. It may be colored with carmine or solution of carmine if desired.

Salol Tooth Powder.

XXVI.

Salolav.oz.	1
Calcium phosphateav.oz.	5
Precipitated chalkav.oz.	5
Magnesium carbonateav.oz.	5
Sodium bicarbonateav.oz.	3
Oil of peppermintfl.dr.	4

Salol may also be added to any of the preceding powders.

Saponaceous Tooth Powder.

Most of the tooth powders contain soap but a tooth powder properly designed as saponaceous should have a large proportion of soap like the following:

XXVII.

White castile soap, powder..	av.oz. 8
Precipitated chalk	av.oz. 4
Magnesium carbonte	av.oz. 2
Sugar, powder	av.oz. 2
Oil of wintergreen.....	fl.dr. 2

Thymol Tooth Powder.**XXVIII.**

Precipitated chalk	av.oz. 15
White castile soap, powder..	av.oz. 1
Thymol	gr. 15
Camphor	gr. 30
Saccharin	gr. 10
Vanillin	gr. 5
Oil of rose.....	drops 6

Rub the camphor and thymol together in a mortar, and warm gently so as to render the mixture liquid; then add the chalk in small portions at a time, reserving about 1 av. ounce; next add the other ingredients, the perfumes being first separately rubbed with the remainder of the chalk.

Violet Tooth Powder.**XXIX.**

Prepared or precipitated chalk	av.oz. 10
Corn starch	av.oz. 4
Cuttle bone, powder.....	av.oz. 2
Orris root, powder.....	av.oz. 1
Sodium bicarbonate	dr. 2
Pumice stone, powder.....	dr. 2
Violet extract	fl.dr. 5

Color greenish with chlorophyll dissolved in alcohol or ether. The powder should be spread out on a paper to dry before sifting.

Powder for Artificial Teeth.

XXX. The following has been especially recommended for this purpose:

Precipitated chalk	av.oz. 12
Cuttle-fish bone, powder..	av.oz. 1
Corn flour	av.oz. 1
White castile soap, powder..	av.oz. 1½
Carbolic acid	fl.dr. 1

This may be flavored to suit.

CAMPHORATED CHALK.

This is a refreshing and harmless dentifrice. It should be kept in well-

stoppered containers to avoid loss of camphor by evaporation.

Various formulas have been given for it, varying in the proportion of the ingredients. The following are used:

I.

Camphor	av.oz. 1
Precipitated chalk	av.oz. 9

Triturate the camphor to powder with a small quantity of alcohol, gradually incorporate the chalk, and pass through a fine sieve.

II.

Precipitated chalk	av.oz. 9
Orris root, powder.....	av.oz. 2
Camphor	av.oz. 1

Prepare like the preceding.

TOOTH CREAMS AND PASTES.

These preparations differ in consistence, the former being rather thin, the latter being a rather hard mass. The former are dispensed in collapsible tubes, the latter in white or opal jars. Both creams and pastes may be produced from tooth powders by the addition of sufficient glycerin, honey or simple syrup, the first mentioned being preferred on account of its antiseptic property which prevents the preparation from spoiling. The creams are usually made by the use of glycerin, these requiring more of the diluting agent than the pastes. Creams also differ from pastes in almost invariably containing soap, which is usually incorporated in the powdered condition. In practice, these distinctions between tooth creams and pastes are not always strictly followed out, most of the so-called pastes dispensed in tubes being really creams.

Most of the remarks made regarding tooth powders will also apply to tooth creams and pastes. Precipitated (or prepared) chalk is the main ingredient, which may be replaced by kieselguhr, though not with milk sugar. Soap is a necessary ingredient, and orris, pumice stone, sodium bicarbonate, magnesium carbonate and other common ingredients of the powders also enter into the composition of creams and pastes. These

may also be made antiseptic, sweetened, flavored and colored like the powders. The oxygen-yielding compounds are not suitable for use in tooth creams and pastes as they decompose in the presence of moisture.

As in the case of tooth powders, the solid ingredients should be reduced to very fine powder, be well mixed, and then passed through a fine sieve, after which the "massing" substance (glycerin, etc.) may be added. The powder must be thoroughly incorporated with the "massing" liquid, which may be accomplished by beating in a large mortar like making a pill mass. Or, for large quantities a bread mixer, putty machine or other apparatus may be employed.

As regards the "massing" agent, glycerin is more suitable than honey and the latter more so than simple syrup, but glycerin is objectionable because it is liable to separate from the mixture and ooze out from the container and over the label. A better "massing" agent is glycerite of starch or a glycerogelatin mixture, to which saccharin may be added to intensify the sweetness produced by the glycerin. The following "massing" fluid may be used with any mixture of powders.

Gelatin	dr. 1
Water	fl.oz. 2
Glycerin	fl.oz. 6

Dissolve the gelatin in the water by the aid of a gentle heat and add the glycerin.

To make a soft cream more of this liquid must be used than if a hard paste is to be prepared. To fill collapsible tubes with tooth cream, a large glass or hard rubber syringe may be used, or for large quantities, a so-called sausage-stuffing machine may be employed.

Flavors.

The flavoring for tooth creams may be oil of peppermint or of wintergreen or any of the combinations directed for tooth powders. Or the following combinations will prove acceptable:

I.

Oil of eucalyptus	m. 60
Oil of peppermint	m. 30
Oil of rose geranium	m. 30
Oil of clove	m. 30
Oil of anise	drops 10

II.

Oil of rose	m. 20
Oil of cinnamon	m. 40
Oil of lemon	fl.dr. 2½
Oil of clove	fl.dr. 3
Tincture of vanilla	fl.oz. 1

III.

Oil of lemon	fl.dr. 1
Oil of clove	fl.dr. 1
Oil of peppermint	fl.dr. 4
Tincture of benzoin	fl.dr. 2

IV.

Oil of pimento	m. 25
Oil of sage	m. 40
Oil of clove	fl.dr. 2
Oil of peppermint	fl.dr. 4

Suitable names for tooth pastes and creams are the following: "Menthol glycerin tooth cream (or paste)," "Castilian tooth cream (or paste)," "Persian tooth cream (or paste)," "cherry tooth cream (or paste)," "creta cream (or paste)," "Oriental tooth cream (or paste)," "saponaceous tooth cream (or paste)," "damask rose tooth cream (or paste)," "eucalyptus tooth cream (or paste)," "coca tooth cream (or paste)," "coral tooth cream (or paste)," "salicylated tooth cream (or paste)," "odontine," "rose tooth cream (or paste)," "kalodont," "salol tooth cream (or paste)," "thymol tooth cream (or paste)," "violet tooth cream (or paste)," "dentine," "dentalba," "dental cream (or paste)," "antiseptic tooth cream (or paste)," "carbolated tooth cream (or paste)," "camphorated tooth cream (or paste)," "charcoal tooth paste," "ruby tooth cream (or paste)," "myrrhine tooth cream (or paste)," "Vienna tooth cream (or paste)," etc. The word "dentifrice" may in each instance be substituted, if desired, for the word "tooth" or for the phrase "tooth cream" or "tooth paste."

I. Blair's formula:

Soft (green) soap	av.oz. 2
Starch	av.oz. 1

Water	f.oz. 1
Glycerin	f.oz. 16
Precipitated chalk	f.oz. 16
Oil of peppermint.....	f.oz. 1

Triturate the starch with the water and glycerin to a smooth mixture and heat with constant stirring to form a glycerite of starch. With this incorporate the soap, chalk and oil (and coloring if desired), beating all ingredients together so as to form a smooth paste.

II. Culley's formula:

Precipitated chalk	av.oz. 8
Prepared chalk	av.oz. 8
White castile soap, powder.....	av.oz. 1/2
Thymol	gr. 3
Oil of cassia.....	m. 5
Oil of sassafras.....	m. 15
Oil of wintergreen.....	m. 45
Alcohol	f.dr. 2
Solution of carmine, N. F., enough to color pink.	

Mix well and make a paste or cream by adding enough of this mixture:

Gelatin	gr. 30
Water	f.oz. 2
Glycerin	f.oz. 4
Saccharin	gr. 4

Instead of using two kinds of chalk, either one alone in double amount may be used.

III. Formula of the Swedish Pharmacopoeia:

Precipitated chalk	av.oz. 13
White castile soap, powder.....	av.oz. 4
Glycerin	av.oz. 3
Oil of peppermint.....	m. 100

IV. Mme. Qui Vive's formula:

Precipitated chalk	av.oz. 8
Orris root, powder.....	av.oz. 8
White castile soap, powder.....	av.oz. 2
Borax, powder	av.oz. 2
Myrrh, powder	av.oz. 1

Mix well, and add honey and glycerin, each, equal parts, to make a paste. Color slightly with carmine and flavor with wintergreen.

V.

Precipitated chalk	av.oz. 16
White castile soap.....	av.oz. 1
Gelatin	av.oz. 1/2
Saccharin	gr. 15
Menthol	gr. 30
Oil of eucalyptus	f.dr. 1
Oil of wintergreen or cassia.....	f.dr. 3

Glycerin	f.oz. 16
Water	f.oz. 16

Triturate the oils, menthol and saccharin together and gradually incorporate the chalk until the whole is well mixed.

Also soak the gelatin in half the water, previously heated, until thoroughly softened. Dissolve the soap in the remainder of the water by the aid of heat, stirring frequently, and replacing, from time to time, the water lost by evaporation. Mix the gelatin and soap solutions and incorporate with the chalk mixture. If a soft cream for collapsible tubes is desired, use 19 or 20 fluidounces of the "massing" mixture and if a hard paste for jars is wanted, use only 12 fluidounces of the "massing" mixture, in which case an especially thorough beating in a mortar will be necessary.

The preparation may be colored either pink or dark red if desired by the addition of cochineal coloring or solution of carmine of the N. F.

The soap used should be the fresh (moist) kind, which may be grated from the large bars or cakes.

VI.

Precipitated chalk	av.oz. 19
Soap, powder	av.oz. 3
Sugar, powder	av.oz. 5
Saccharin	gr. 5
Thymol	gr. 10
Oil of peppermint.....	m. 20
Oil of cinnamon.....	m. 20
Solution of soda.....	f.oz. 4
Glycerin	f.oz. 3
Water	f.oz. 3

Make a cream or paste in the usual manner. The solution of soda is said to prevent hardening of the cream in the course of time.

Arnica Tooth Paste.

VII.

Precipitated chalk	av.oz. 12
White castile soap, powder.....	av.oz. 4
Cuttle bone, powder.....	av.oz. 2
Tincture of arnica.....	f.oz. 2
Solution of carmine, N. F.....	f.dr. 1
Oil of peppermint.....	f.dr. 1
Oil of sassafras.....	f.dr. 4
Glycerin	f.oz. 4
Water, enough to make a paste or cream.	

Camphorated Tooth Paste.**VIII. Culver's formula:**

Any of the preceding may be converted into a tooth paste by replacing the flavor with camphor, or the following may be used:

Precipitated chalk	av.oz. 13
Cuttle bone, powder.....	av.oz. 3
White castile soap, powder.....	av.oz. 2
Vanillin	gr. 5
Saccharin	gr. 10
Thymol	gr. 15
Camphor	gr. 30
Oil of peppermint.....	m. 20
Oil of wintergreen.....	gr. 40

Make into a paste or cream with a mixture of 4 parts of glycerin and 1 part of water.

Harlan's Tooth Paste.**IX.**

Precipitated chalk	av.oz. 8
Orris root, powder.....	av.oz. 8
White castile soap, powder.....	av.oz. 2
Borax, powder	av.oz. 2
Myrrh, powder	av.oz. 1
Honey, glycerin, each sufficient to form a soft paste.	
Carmine, enough to color.	
Perfume, to suit.	

Menthol Tooth Cream.**X.**

Precipitated chalk	av.oz. 8
White castile soap, powder.....	av.oz. 4
Magnesium carbonate	av.oz. 2
Menthol (dissolved in some alcohol),	
Solution of carmine,	
Glycerin, each.....	sufficient

Rub the first three ingredients into a paste with glycerin, then flavor and color to suit with the menthol and carmine solutions.

Peroxid Tooth Cream.**XI. Kuehl's formula:**

Precipitated chalk	av.oz. 10
Soap, powder	av.oz. 2
Hydrogen peroxid,	
Glycerin, each, to form a suitable cream.	

Flavor with oils of peppermint and lavender flowers.

Potassium Chlorate Tooth Paste.

XII. According to Unna, potassium chlorate is a most valuable ingredient of tooth preparations. It is stated to exer-

cise marked tonic properties on the teeth, gums and tonsils, acting favorably on mercurialized gums. It acts best in the form of a tooth paste containing 50% of this salt, such as the following:

Potassium chlorate	av.oz. 10
Precipitated chalk	av.oz. 2
Magnesium carbonate	av.oz. 2
Sugar	av.oz. 1
Soap, powder	av.oz. 1 1/2
Glycerin	fl.oz. 1
Water	fl.oz. 3
Thymol	gr. 30
Vanillin	gr. 30
Oil of peppermint.....	fl.dr. 2

Reduce all to fine powder and make a paste in the usual manner.

Salicylated Tooth Paste.**XIII.**

Precipitated chalk	av.oz. 16
White castile soap, powder.....	av.oz. 4
Sugar, powder	av.oz. 4
Orris root, powder.....	av.oz. 4
Pumice stone, powder.....	av.oz. 1 1/2
Sodium salicylate	gr. 80
Glycerin	fl.oz. 2

Carmine or solution of carmine.....sufficient to color
Water.....enough to form a mass

Mix well and perfume with oil of peppermint, wintergreen or other oil.

Thymol Tooth Paste.**XIV.**

Precipitated chalk	av.oz. 16
Magnesium carbonate	av.oz. 1
Orris root, powder.....	av.oz. 3
Thymol	dr. 1

Mix well and make a mass with sufficient of the following mixture:

Gelatin, pure	gr. 70
Glycerin	fl.oz. 3
Water	fl.oz. 1

Dissolve by the application of a gentle heat.

TOOTH SOAPS.

It is not likely that very many pharmacists will care to undertake the manufacture of tooth soap as this requires the experience of a professional soap maker. However, a few hints and formulas will not be amiss. Tooth soaps partake of the general character of tooth creams and pastes but are much harder. They may be put up in the form of round sticks or flat cakes like camphor

ice. These may be wrapped in oiled paper or tin-foil. Or the soap may be dispensed in flattened tin boxes. In using, the moistened brush is first rubbed against the stick or cake.

The composition of tooth soap is largely like that of a tooth paste but must contain at least 20% of soap. Flavoring, coloring and antiseptic agents must be added as in the case of creams and powders. The "massing" agent had best contain considerable alcohol so that the product will dry harder and more quickly.

I.

Talcum, powder	av.oz. 10
Pumice stone, powder.....	av.oz. 1½
Orris root, powder.....	av.oz. 2

Mix well and color with carmine if a pink or red color is desired, and with chlorophyll, if a green color is desired, and flavor with a mixture consisting of

Oil of peppermint.....	fl.dr. 2
Oil of sage.....	fl.dr. 1
Oil of calamus.....	m. 50
Oil of thyme, white.....	m. 25
Cumarin	gr. 15

Also mix

White castile soap, powder.....	av.oz. 10
Alcohol	fl.oz. 5
Glycerin	fl.oz. 1½

Beat together to form a soft paste, and then gradually incorporate the previous mixture of powders. Press the mass into molds, and, after removing the cakes, brush the latter over with tincture of benzoin containing a little oil of peppermint. When dry, cover with tin-foil. The mass may also be pressed into tin boxes and allowed to dry in the latter.

II.

White castile soap, powder.....	av.oz. 10
Talcum, powder	av.oz. 4
Pumice stone, powder.....	av.oz. 2
Cuttle-fish bone, powder.....	av.oz. 2
Sodium carbonate, dried.....	dr. 3
Cochineal, powder	dr. 1½
Diluted alcohol	fl.oz. 1
Glycerin	fl.dr. 6
Oil of peppermint.....	fl.dr. 2
Rose water	sufficient

Mix the soap, talcum, pumice and cuttle-fish bone, then add the cochineal pre-

viously triturated to a fine powder. Having mixed these ingredients thoroughly, add the soda, alcohol and glycerin, stirring well, incorporate the oil, and then add enough rose water to form a mass. Divide into pieces or press into boxes, and allow to dry.

TOOTH WASHES. (Liquid Dentifrices.)

These are preparations made from quillaja or soap, and are colored and flavored. They replace the tooth powders, pastes, creams and soaps.

They may be known by such titles as "eudonto," "quillaja tooth wash," "kalliodont," "odontine," "saponaceous tooth wash," "aromatic dentifrice," "dentoline," "antiseptic liquid dentifrice," "almond tooth essence," "Oriental tooth wash," "carbolated tooth wash," "camphorated tooth wash," etc.

See also under heading Mouth Washes.

Saponaceous Tooth Washes.

These consist of a solution of soap, usually white castile, sometimes soft soap U. S. P., in a mixture of alcohol and water, the whole being flavored like the powders and creams. The preparations should be filtered clear and bright before bottling. Before filtering they should be set aside for several days in a cool place to permit all the excess of stearin and palmitin to precipitate.

I. Styles' formula No. 1:

White castile soap, powder.....	av.oz. 1½
Camphor	dr. 1
Oil of rosemary.....	m. 15
Alcohol	fl.oz. 8
Water, to make.....	fl.oz. 30

Mix all, stir frequently until the soap is practically all dissolved, and filter.

II. Styles' formula No. 2:

White castile soap, powder.....	av.oz. 2
Orris root, powder.....	av.oz. 1
Cochineal	dr. 2
Oil of wintergreen.....	fl.dr. 1
Oil of peppermint.....	fl.dr. 1
Oil of lemon.....	fl.dr. 2
Glycerin	fl.oz. 2
Alcohol	fl.oz. 32

Mix, macerate for 2 days, agitating frequently, and filter.

III. Culley's formula:

White castile soap, powder.....	av.oz.	1/2
Oil of eucalyptus.....	drops	8
Oil of cassia.....	drops	20
Oil of wintergreen.....	drops	40
Thymol	gr.	4
Menthol	gr.	4
Resorcin	gr.	8
Glycerin	fl.oz.	4
Alcohol	fl.oz.	12
Water	fl.oz.	20
Solution of carmine, enough to color.		

Dissolve the oils, thymol and resorcin in the alcohol, add the glycerin, then the water, and coloring matter, let stand for a day or two, agitating frequently, then filter, first cooling to 40° F.

IV. Te-Linde's formula:

White castile soap.....	av.oz.	2
Oil of clove.....	m.	20
Oil of peppermint.....	m.	40
Oil of wintergreen.....	m.	60
Tincture of vanilla.....	fl.dr.	6
Solution of carmine.....	fl.dr.	2
Glycerin	fl.oz.	6
Alcohol	fl.oz.	14
Water, to make.....	fl.oz.	32

Dissolve the soap, in shavings, in 8 fluidounces of boiling water, and the oils in the alcohol. Mix these, add the other ingredients, and filter clear.

V. Parker's formula:

White castile soap.....	av.oz.	4
Glycerin	fl.oz.	4
Water	fl.oz.	8
Alcohol	fl.oz.	16
Oil of peppermint.....	drops	20
Oil of wintergreen.....	drops	50
Cochineal coloring, enough to color.		

Dissolve the soap in the mixed glycerin, water and alcohol, add the oils and coloring, and filter.

VI. Thayer's formula:

White castile soap, powder.....	av.oz.	1 1/2
Thymol	gr.	12
Oil of clove.....	drops	15
Oil of orange.....	drops	15
Oil of rose.....	drops	15
Oil of wintergreen.....	drops	15
Glycerin	fl.oz.	3
Alcohol	fl.oz.	12
Water	fl.oz.	18

Prepare in the usual manner. The preparation may be colored red with cochineal coloring or solution of carmine, N. F., or green with chlorophyll.

VII. Caldwell's formula:

Tincture of green soap.....	fl.oz.	4
Oil of clove.....	m.	5
Oil of cassia.....	m.	5
Oil of peppermint.....	m.	30
Oil of wintergreen.....	m.	30
Glycerin	fl.oz.	4
Alcohol	fl.oz.	12
Water	fl.oz.	12
Compound tincture of cochineal, to color.		

Mix all the ingredients, let stand for 24 hours, and filter.

The soap for the tincture must be soft, almost neutral, and entirely free from odor.

The tincture of cochineal is to be made according to this formula:

Cochineal, bruised	av.oz.	1
Potassium carbonate	gr.	70
Diluted alcohol, to make.....	fl.oz.	4
Mix, macerate, and filter.		

Quillaja Tooth Washes.

In the following preparations, the foaming and cleansing agent is soap bark, which may be in the form of infusion, tincture, or fluid extract. This preparation may be flavored, colored or made antiseptic like the saponaceous tooth washes.

VIII. Thayer's formula:

Infusion of quillaja (1:10).....	fl.oz.	16
Infusion of red rose petals (1:10)	fl.oz.	4
Tincture of myrrh.....	fl.oz.	1
Liquefied carbolic acid.....	drops	25
Menthol	gr.	6
Oil of clove.....	drops	4
Oil of neroli.....	drops	4
Oil of peppermint.....	drops	4
Oil of wintergreen.....	drops	8
Oil of rose geranium.....	drops	12
Glycerin	fl.oz.	4
Alcohol	fl.oz.	10
Tincture of cudbear, to color.		

Dissolve the oils and menthol in the alcohol, add the other ingredients, let stand for a week, and filter through magnesia.

IX. Edel's formula:

Fluid extract soap bark.....	fl.oz.	4
Oil of clove.....	drop	8
Oil of wintergreen.....	drops	16
Glycerin	fl.oz.	8
Alcohol	fl.oz.	8
Water	fl.oz.	12
Tincture of cudbear, to color.		

Mix and filter. Or the preparation may be made from the ground soap bark by percolation.

X. Styles' formula:

Soap bark, coarse powder.....	av.oz. 4
Benzoic acid	dr. 2
Thymol	gr. 15
Oil of wintergreen.....	m. 10
Oil of eucalyptus.....	m. 15
Glycerin	fl.oz. 1
Alcohol	fl.oz. 16
Water, to make.....	fl.oz. 32

Mix all, macerate for 7 days, agitating occasionally, and filter.

XI. Taylor's formula:

Soap bark, ground.....	av.oz. 4
Sodium salicylate	av.oz. $\frac{1}{2}$
Oil of clove.....	drops 20
Oil of bergamot.....	fl.dr. 1
Oil of wintergreen.....	fl.dr. 1
Alcohol	fl.oz. 2
Glycerin	fl.oz. 3
Diluted alcohol, to make....	fl.oz. 32

Solution of carmine, enough to color.

Extract the bark by percolation with diluted alcohol mixed with glycerin. In the alcohol dissolve the oils, mix this with the percolat , add the other ingredients, filter, and pass, if needed, enough diluted alcohol through the filter to make 32 fluidounces of product.

XII. Harnist's formula:

Quillaja, coarse powder....	av.oz. 2
Oil of clove.....	drops 10
Oil of wintergreen.....	drops 30
Tincture of vanilla.....	fl.dr. 4
Glycerin	fl.oz. 2
Alcohol	fl.oz. 8
Rose water	fl.oz. 32
Solution of carmine, N. F....	fl.dr. $1\frac{1}{2}$

Dissolve the oils in the alcohol, add the other ingredients, macerate for 2 weeks, agitating occasionally, and filter.

MOUTH WASHES. (Collutories.)

These are preparations intended for cleansing, purifying and deodorizing the mouth, and frequently also for cleansing the teeth. They serve the purpose of arresting decay, neutralizing bad breath, and relieving inflamed mucous membrane. Before use, they are usually diluted with water, about 1 teaspoonful being added to a cupful of the latter. They always contain antiseptic and flav-

oring constituents, sometimes also an astringent substance like tannic acid, kino, rhatany, oak bark, etc., and frequently also a coloring constituent.

They are usually dispensed under such names as "prophylactic tooth and mouth wash," "dentifrice elixir," "thymol dentifrice," "salol mouth wash," "aromatic mouth wash," "astringent mouth wash," "tooth tincture," "mouth essence," "elixir of roses," "violet mouth wash," "rubicreme," "favorite tooth and mouth wash," "mentholated dentifrice," "mentholine tooth wash," "eau dentifrice," "Imperial mouth wash," "salicylic mouth wash," "eau angelique," "carbonated tooth wash," "mouth water," etc.

Excellent mouth washes are Antiseptic Solution, U. S. P., and Alkaline Antiseptic Solution, N. F.

I.

Menthol	gr. 8
Saccharin	gr. 15
Borax	dr. 2
Solution of potassa.....	fl.dr. 4
Oil of eucalyptus.....	drops 10
Oil of wintergreen or cassia..	m. 15
Alcohol	fl.oz. 4
Water, to make.....	fl.oz. 16

Dissolve the oils and menthol in the alcohol, the borax in the water, mix, add the other ingredients, shake until dissolved, and filter. Color if desired with compound tincture of cudbear.

II.

Boric acid.....	dr. 6
Oil of peppermint.....	drops 20
Oil of cassia.....	dr. 2
Carbolic acid.....	fl.dr. 2
Chloroform	fl.dr. 2
Alcohol	fl.oz. 7
Glycerin, to make.....	fl.oz. 16

Mix, dissolve by agitation, and filter. Put a teaspoonful to a glassful of water as a mouth wash.

III.

Oil of clove.....	m. 5
Oil of spearmint.....	m. 15
Oil of peppermint.....	m. 30
Oil of red cedar wood.....	m. 60
Tincture of myrrh.....	fl.oz. 1
Tincture of cochineal.....	to color
Alcohol, to make.....	fl.oz. 16

IV. Formula of the German Hospital (Phila.):

Antiseptic solution.....	f.oz. 1
Hydrogen peroxid.....	f.oz. 1
Saturated solution of potassium chlorate.....	f.oz. 1
Distilled water.....	f.oz. 1
V. Formula of the French Codex:	
Oil of cinnamon.....	m. 15
Oil of anise.....	m. 30
Oil of clove.....	m. 30
Oil of peppermint.....	f.dr. 2
Tincture of benzoin.....	f.dr. 2
Tincture of guaiac.....	f.dr. 2
Tincture of pellitory.....	f.dr. 2
Tincture of cochineal.....	f.dr. 5
Water.....	f.oz. 6
Alcohol, to make.....	f.oz. 32

Mix, let stand for 24 hours, and filter.

VI. Mme. Qui Vê's formula:

Myrrh, powder.....	av.oz. 1
Borax, powder.....	av.oz. 1
Red saunders.....	av.oz. 1
Sugar.....	av.oz. 1
Cologne water.....	f.oz. 6
Water.....	f.oz. 9
Alcohol.....	f.oz. 18

Mix, macerate for several days, and filter.

Acetanilid Dentifrice.

VII.

Acetanilid.....	dr. 5
Oil of peppermint.....	drops 30
Oil of rose geranium.....	drops 30
Tincture of cochineal.....	m. 30
Glycerin.....	f.oz. 2
Alcohol.....	f.oz. 14

Mix, dissolve, and filter.

In using, add a teaspoonful to half a glass of water.

Carbolic Mouth Wash.

VIII.

Carbolic acid.....	f.dr. 2
Oil of clove.....	m. 5
Tincture of rhatany.....	m. 40
Tincture of cudbear.....	f.dr. 2
Tincture of quillaja.....	f.oz. 1
Glycerin.....	f.dr. 6
Peppermint water.....	f.oz. 2
Rose water.....	f.oz. 12

Mix and filter.

Chinosol Mouth Wash.

IX.

Chinosol.....	gr. 5
Oil of cinnamon.....	drops 10
Oil of peppermint.....	f.dr. 1
Tincture of cochineal.....	m. 100

Tincture of Siam benzoin.....	f.dr. 10
Alcohol.....	f.oz. 15

Mix, dissolve and filter.

Eau Anatherine.

X.

Myrrh.....	gr. 80
Clove.....	gr. 50
Red saunders.....	gr. 50
Guaiac wood.....	gr. 30
Cassia bark.....	gr. 30
Oil of clove.....	drops 5
Oil of cassia.....	drops 5
Rose water.....	f.oz. 5
Alcohol.....	f.oz. 12

Reduce all the drug to coarse powder, macerate for 7 days, agitating occasionally, and filter.

Eau de Botol

This is an old French preparation specially for which various formulas are offered, among them the following:

XI.

Star anise.....	dr. 6
Cassia.....	dr. 2½
Clove.....	dr. 2½
Cochineal.....	gr. 36
Oil of peppermint.....	m. 40
Oil of rose.....	drops 5
Water.....	f.oz. 4
Alcohol.....	f.oz. 12

Mix the drugs, reduce to coarse powder, add the alcohol and water, macerate for 7 days, agitating occasionally, filter, and add the oils. The drugs may also be extracted by percolation.

Formaldehyde Mouth Wash.

XII.

Formaldehyde.....	dr. 4
Tincture of benzoin.....	f.oz. 2
Tincture of myrrh.....	f.dr. 4
Oil of peppermint.....	m. 15
Oil of anise.....	m. 10
Oil of cinnamon.....	m. 5
Alcohol.....	f.oz. 12
Cochineal, powder.....	gr. 10

Mix, macerate for several days, and filter.

Salol Mouth Wash.

XIII. Formula of the British Pharmaceutical Codex:

Salol.....	dr. 3
Thymol.....	gr. 20
Oil of peppermint.....	m. 40
Spirit of anise.....	m. 80
Solution of saccharin.....	f.dr. 3
Alcohol, to make.....	f.oz. 16

Dissolve the salol and thymol in 8 fluidounces of alcohol, heating gently if necessary, add the other ingredients, and filter.

In using, add a few drops to a wine-glassful of water.

XIV.

Saccharin	gr. 3
Salol	dr. 5
Oil of thyme.....	drops 3
Oil of peppermint.....	m. 40
Tincture of vanilla.....	fl.oz. 3
Alcohol, to make.....	fl.oz. 20
Mix, dissolve and filter.	

Thymol Mouth Wash.

XV.

Thymol	gr. 75
Oil of peppermint.....	m. 75
Tincture of myrrh.....	fl.dr. 6
Alcohol, to make.....	fl.oz. 16
Mix, dissolve and filter.	

Tincture of Myrrh and Borax.

XVI. Formula of the British Pharmaceutical Codex:

Tincture of myrrh.....	fl.oz. 6
Tincture of rhatany.....	fl.dr. 5
Oil of neroli.....	drops 10
Oil of bergamot.....	m. 15
Oil of lemon.....	m. 15
Oil of orange.....	m. 15
Oil of rosemary.....	m. 15
Borax, powder.....	dr. 3
Glycerin	fl.dr. 6
Alcohol, to make.....	fl.oz. 16

Dissolve the borax in the glycerin by the aid of heat, allow to cool, add the alcohol, oils, and tinctures, and filter.

This is used to make a mouth wash—about 1 in 20 with water—for spongy gums and aphthous ulceration.

Violet Mouth Wash.

XVII.

Oil of bitter almonds.....	drops 5
Glycerin	fl.dr. 1
Stronger tincture of orris.....	fl.oz. 2
Spirit of rose.....	fl.oz. 1½
Alcohol, to make.....	fl.oz. 16

Mouth Washes for Infants.

In case of canker sore mouth in infants, it is of advantage to cleanse the mouth with a suitable antiseptic solution. This solution is also useful before feeding especially when there is vomiting. The following may be used:

XVIII.

Boric acid.....	dr. 1
Hydrogen peroxid.....	fl.oz. 2
Glycerin	fl.oz. 1
Rose water.....	fl.oz. 3
Mix, dissolve, and filter.	

XIX.

Oil of peppermint.....	m. 20
Oil of clove.....	m. 10
Oil of wintergreen.....	m. 10
Glycerin	fl.oz. 1
Distilled water.....	fl.oz. 5
Mix and filter.	

CACHOUS. (Breath Perfumes.)

These consist of various aromatics combined with licorice extract, sometimes sugar, the whole being formed into a mass which may be divided into pellets, or it may be rolled out in a thin sheet and cut into little squares, or it may be rolled out into a very thin pill "pipe" about the size of a knitting needle, which may then be cut into short sections. After dividing the mass, the particles may be dried. If desired, the pellets may be silver-coated.

I.

Oil of peppermint.....	drops 25
Oil of lemon.....	drops 15
Oil of neroli.....	drops 15
Oil of cinnamon.....	drops 15
Clove	dr. ½
Cardamom	dr. 1
Vanilla	dr. 1½
Orris root.....	dr. 2
Mace	dr. 5
Sugar	dr. 4
Licorice extract, powder...	av.oz. 1
Mucilage of gum arabic...	sufficient

Reduce the drugs to powder, add the remaining ingredients, make a mass and divide into pills weighing 1 grain each, or roll out flat and cut into small pieces.

II.

Musk	gr. 1
Civet	gr. 1
Oil of vetivert.....	drop 1
Oil of rose.....	drops 5
Carmine	gr. 5
Tartaric acid.....	gr. 10
Gum arabic	av.oz. 2
Sugar	av.oz. 8

Mix the ingredients intimately, forming a powder, add enough water to make a dough, and make into pellets.

III.

Musk	gr.	1
Clove	dr.	1
Cardamom	dr.	2
Nutmeg	dr.	2½
Vanilla	dr.	3
Orris	dr.	3½
Oil of cinnamon.....	drops	8
Oil of neroli.....	dorps	16
Oil of lemon.....	m.	30
Oil of peppermint.....	m.	50
Sugar	av.oz.	1
Licorice extract.....	av.oz.	2

Reduce the drugs to fine powder, add the remaining ingredients, mix well, make a mass with the water, and form into pellets, or roll the mass out and cut into very small pieces.

IV.

Oil or clove.....	m.	15
Oil of peppermint.....	m.	45
Tincture of ambergris.....	m.	15
Tincture of musk.....	m.	15
Orris root.....	dr.	1
Mastic	dr.	1
Cascarilla	dr.	1
Gum arabic.....	dr.	3
Catechu	dr.	4
Licorice extract.....	av.oz.	4

Reduce all the solids to powder, incorporate with the liquids, make a mass with water, and divide into pills which may be coated with silver.

CHAPTER V.

BATH, FOOT AND MANICURE PREPARATIONS.

BATH POWDERS.

Some of the formulas mentioned below furnish effervescent preparations, others are non-effervescent. These powders render hard water soft.

I.

Tartaric acid.....	av.oz.	10
Sodium bicarbonate.....	av.oz.	12
Starch or rice flour.....	av.oz.	6

A few spoonfuls of this when stirred into a bathtubful of water cause a copious liberation of carbon dioxide, which is thought by some to be "refreshing." The amount of sodium bicarbonate may be increased or some borax or potassium or sodium carbonate may be added if a more alkaline preparation is desired.

Perfume may be added to this pow-

der, volatile oils being a good form. Oil of lavender flowers would be a suitable addition in the proportion of a fluidram or more to the av. pound of powder. A better but more expensive perfume may be obtained by mixing 1 part of oil of rose geranium with 6 parts of oil of lavender flowers. Another good mixture is 2 parts of oil of neroli and 1 part of oil of rosemary.

A perfume still more desirable may be had by adding a mixture of the oils from which cologne water is made. For an ordinary quality the following will suffice:

Oil of lavender flower.....	f.dr.	1
Oil of rosemary.....	f.dr.	1
Oil of bergamot.....	f.dr.	2
Oil of lemon	f.dr.	4
Oil of clove.....	drops	8

For a better quality the following may be used:

Oil of neroli.....	f.dr.	2
Oil of cedrat.....	f.dr.	2
Oil of orange.....	f.dr.	2
Oil of rosemary.....	f.dr.	1
Oil of bergamot.....	f.dr.	1

A fluidram or more of either of these mixtures may be used to the pound, as in the case of lavender.

The following perfume is also fine:

Heliotropin	gr.	15
Oil of pimento	m.	15
Oil of linaloe.....	m.	15
Oil of lemon.....	m.	30
Oil of lavender flowers.....	m.	30
Oil of bergamot.....	f.dr.	3

II.

Sodium carbonate, monohydrated	av.oz.	8
Tartaric acid.....	av.oz.	3
Orris root, powder.....	av.oz.	1
Oil of lemon.....	f.dr.	1
Oil of orris or solution of ionone.....	m.	10
Oil of ylang ylang.....	m.	10
Mix well. To be used like No. I.		

III.

Sodium bicarbonate.....	av.oz.	12
Borax	av.oz.	12
Potassium carbonate.....	dr.	3
Ammonium chlorid.....	dr.	3
Oil of anise.....	m.	30
Oil of clove.....	m.	30
Oil or sassafras.....	m.	30
Oil of wintergreen.....	m.	30

Oil of bergamot.....m.	30
Oil of rose geranium.....m.	30
Oil of lavender flowers.....m.	30

Mix the salts thoroughly with the oils and keep the product in well-stoppered wide-mouthed bottles.

IV.

Borax	av.oz. 12
Sodium bicarbonate.....	av.oz. 4
Potassium carbonate.....	av.oz. 2
Oil of rosemary.....	m. 30
Oil of orange.....	fl.dr. 1
Oil of lavender flowers.....	fl.dr. 2

Or any of the perfumes mentioned in Nos. I, II or III may be used.

In using, mix a tablespoonful with the bath or a half teaspoonful with a basinful of water.

BATH TABLETS.

These are used in the same manner, for similar purposes, and have the same composition as the preceding bath powders. The effervescent powders may be converted into tablets by making into a mass by means of alcohol, then forming into tablets of suitable size, and drying. The non-effervescent powders may be made into tablets in the same manner by means of water.

BATH SOAP PASTE.

Soft (green) soap.....	av.oz. 16
Glycerin	fl.oz. 2
Alcohol	fl.oz. 1
Perfume	to suit

Mix the soap, glycerin and alcohol and add the perfume. A light-colored, nearly odorless soft soap should be used. The perfume may be any oil or mixture of oils such as are used in formulas No. I, II or III under Bath Powders. The mixture may be dispensed in jars or wide-mouthed bottles. It is to be used for the same purposes as bath powders or tablets.

BATH BAGS. (Mme. Qui Vive's Formulas.)

I. Violet Bath Bags:

Oatmeal, finely ground.....	lb. 2
Orris root, powder.....	oz. 4
Almond flour.....	oz. 3
White castile soap, shaved fine	cake 1

Take one yard of cheesecloth and make it into little bags about 4 inches square and fill them with this mixture. Larger bags may be made for the regular bath.

II. Quireda Bath Bags:

Fine oatmeal.....	lb. 1
New clean bran.....	pint 1
Orris root, powder.....	lb. $\frac{2}{5}$
Almond meal.....	lb. $\frac{2}{5}$
White castile soap, dried.....	oz. 4
Primrose sachet powder.....	oz. 1

The bags should not be used a second time as the mixture in them has tendency to sour.

PERFUMED SEA SALT.

Stanislaus' formula:

Ordinary sea salt.....	av.lb. 5
Cumarin	dr. 3
Oil of bergamot.....	dr. 1
Anisic aldehyde.....	m. 30

Mix the perfumes together, then pour over the salt, mixing well by rubbing between the hands.

A more convenient way of doing is to dissolve the perfumes in alcohol before mixing with the salt.

ARTIFICIAL SULFUR BATHS.

Sulfur baths ordinarily are made by simply dissolving potassium sulfuret (sulfurated potassa) in water, in the proportion of from $\frac{1}{2}$ av. ounce to 2 av. ounces for every 40 gallons of water. But, in order to obtain a bath more closely resembling some of the more noted natural sulfurous springs which have proven so effectual in the treatment of rheumatism and skin diseases of certain types, the following is advised:

Sulfurated potassa or soda.....	av.oz. $\frac{1}{2}$
Sodium bicarbonate.....	av.oz. 1
Sodium chlorid.....	gr. 60
Castile soap shavings.....	gr. 30
Calcium carbonate.....	gr. 30
Alum	gr. 30
Water	gal 1

These various materials are boiled in a sufficient quantity of the water to dissolve them, and the solution is stirred about with a wooden or glass rod until an odor of sulfuretted hydrogen

becomes manifest. The solution is then poured into the patient's ordinary water bath, previously heated to about 35° C.

BATHING SALTS.

Popular faith in mineral water baths is quite strong and a variety of salt mixtures to make artificial waters for bathing purposes should prove a profitable addition to the pharmacist's stock. These salts will consist of suitable ingredients mixed with considerable proportion of salt which adds the requisite bulk. These preparations may be put up in one-pound round paper boxes or in cans. On the label are to be printed directions for use, remarks upon temperature of the water, hygienic rules, medicinal uses, etc.

The following variety of bathing salts is advised:

1. A sea salt as a bracing and invigorating bath.
2. An acid bath for liver, indigestion, spleen and bowel troubles, etc.
3. An alkaline bath for rheumatism, gout, kidney troubles, etc.
4. An alternative bath for blood diseases, etc.
5. A sulfur bath for skin diseases, etc.
6. A tonic bath for chlorosis, anæmia, loss of appetite, etc.

Sea Bath Salt.

- I.
- | | |
|-------------------------|-----------|
| Potassium iodid..... | gr. 10 |
| Potassium bromid..... | gr. 20 |
| Sodium bicarbonate..... | av.oz. 1 |
| Magnesium sulfate..... | av.oz. 2 |
| Salt, to make..... | av.oz. 16 |
- Have all the salts in a coarse granular condition and mix.

Acid Bath Salt.

- II.
- | | |
|---------------------------|-----------|
| Tartaric acid..... | av.oz. 1 |
| Potassium bicarbonate.... | av.oz. 1 |
| Potassium bitartrate..... | av.oz. 2 |
| Salt | av.oz. 12 |
- Mix as in No. I.

Alkaline Bath Salt.

- III.
- | | |
|-------------------------|----------|
| Sodium bicarbonate..... | av.oz. 6 |
|-------------------------|----------|

- | | |
|---------------------|----------|
| Sodium sulfate..... | av.oz. 2 |
| Salt | av.oz. 8 |
- Mix as in No. I.

Alterative Bath Salt.

IV.

- | | |
|-------------------------|-----------|
| Iodin, crystal | gr. 20 |
| Potassium iodid..... | dr. 2 |
| Sodium bicarbonate..... | av.oz. 2 |
| Salt | av.oz. 14 |

Rub the iodine and potassium iodide together, add the sodium bicarbonate, and mix with the salt.

Sulfur Bath Salt.

V.

- | | |
|-------------------------|-----------|
| Sulfurated potassa..... | av.oz. 1 |
| Magnesium sulfate..... | av.oz. 1 |
| Sodium bicarbonate..... | av.oz. 2 |
| Salt | av.oz. 12 |

Mix and proceed as in No. I.

Tonic Bath Salt.

VI.

- | | |
|------------------------|-----------|
| Iron sulfate..... | av.oz. 1 |
| Magnesium sulfate..... | av.oz. 1 |
| Sodium sulfate..... | av.oz. 2 |
| Salt | av.oz. 12 |
- Mix and proceed as in No. I.

PERFUMED AMMONIA WATER.

This is a more or less diluted ammonia water which is perfumed and possibly colored; sometimes soap and alkalies are added. Sometimes it contains considerable alcohol in which case it is not strictly a "water." It is added to water used for bathing or washing to soften it.

I. Palmer's formula:

- | | |
|------------------------------|----------|
| Ammonia water, 10%..... | f.oz. 8 |
| Green soap..... | av.oz. 4 |
| Oleic acid..... | dr. 2½ |
| Oil of bay..... | m. 15 |
| Oil of rosemary..... | m. 15 |
| Oil of verbena..... | m. 75 |
| Distilled water, to make.... | f.oz. 32 |

Dissolve the soap in a pint of water by the aid of heat, allow to cool, add the ammonia water and oils, mix by agitation, and then incorporate the acid and the remainder of the water.

Oil of lemon grass of good quality may be substituted for the oil of verbena.

II.

Stronger ammonia water...	f.oz.	11
Soft (green) soap.....	av.oz.	2
Borax	av.oz.	1½
Cologne water.....	f.oz.	1
Distilled water, to make....	f.oz.	24

Prepare like No. I.

Lavender Ammonia. (Lavender Lotion.)

Any of the preceding may be made into lavender ammonia water by using oil of lavender flowers as the perfume. These preparations may be tinted a suitable color by means of solution of litmus. The following are also good formulas:

III. Mme. Qui Vive's formula:

Ammonia water.....	f.oz.	3
Alcohol	f.oz.	12
Oil of lavender flowers....	f.dr	3

Color, if desired.

IV.

Ammonia water.....	f.oz.	8
Distilled water.....	f.oz.	7
Alcohol	f.oz.	1
Oil of lavender flowers....	drops	10

Color, if desired.

If more alcohol is used, more oil may be incorporated with the mixture.

Violet Ammonia. (Violet Lotion.)

These are usually colored green with solution of chlorophyll or with the following solution:

Copper sulfate.....	av.oz.	1
Potassium bichromate....	av.oz.	1
Ammonia water.....	f.oz.	8
Distilled water.....	f.oz.	16

V. Mme. Qui Vive's formula:

Ammonia water.....	f.oz.	13
Alcohol	f.oz.	12
Essence of violets.....	f.dr.	3

VI.

Stronger ammonia water...	f.oz.	7
Stronger tincture of orris...	f.oz.	1
Alcohol	f.oz.	1
Distilled water.....	f.oz.	24

Chlorophyll, to color.

Mix and filter in a closely-covered funnel through talcum.

FOOT PREPARATIONS.

These consist of powders or liquids, usually the former. They are recommended for tender feet, frequently also

for excessive perspiration of the feet. These two conditions often occur together, though not necessarily so, and sweatiness is usually accompanied by a bad odor, or bromidrosis (sweatiness being hyperidrosis).

FOOT POWDERS.

According to Picken's analysis of commercial foot powders, these usually contain powdered talcum and boric acid, sometimes zinc oxid, starch, orris root, salicylic acid, borax, and alum. The proportion of alum was found to be 3 to 20%, of salicylic acid, 3 to 7%, of zinc oxid, about 25%, and of starch, 15 to 65%. Foot powders therefore consist of talcum and boric acid to which may be added, or which may be partially replaced by, zinc oxid and starch; antiseptics should be added, salicylic acid being especially good for sweaty, ill-smelling feet. Alum may be added for its astringent property. The mixture may be perfumed in any desired manner.

All foot powders should be reduced to a very fine condition by continued trituration and passing through a fine sieve. They are recommended for tender, tired, or sweaty feet, and if containing suitable antiseptics are also beneficial for bad-smelling feet. The powder is to be sprinkled into the shoes and socks. Frequent washing of the feet and daily changes of socks, are also to be recommended.

These powders may be put up in nice round boxes or cartons and may be known by such names as "foot powder," "foot rest," "easy feet," "foot comfort," etc.

I. Salicylated powder of talc, N. F., is an excellent foot powder, of the following composition:

Salicylic acid.....	av.oz.	1
Boric acid.....	av.oz.	3½
Talcum	av.oz.	29

Reduce all to fine powder, mix well and pass through a fine sieve.

II. Salicylated Powder with Talc of

the German Pharmacopeia is like the preceding but contains wheat starch instead of boric acid.

III.

Sulfur	av.oz. 2
Boric acid.....	av.oz. 4
Talcum	av.oz. 6
Prepare like No. I.	

IV.

Alum	av.oz. 1
Boric acid.....	av.oz. 2
Talcum	av.oz. 4
Starch	av.oz. 6
Oil of lavender flowers...	drons 15
Prepare like No. I.	

V.

Orris root.....	av.oz. 2
Zinc oxid.....	av.oz. 2
Sulfur	av.oz. 2
Talcum	av.oz. 10
Prepare like No. I.	

VI.

Orris root.....	av.oz. 2
Zinc oxid.....	av.oz. 6
Talcum	av.oz. 12
Prepare like No. I.	

VII.

Salicylic acid.....	av.oz. 1
Zinc oleate.....	av.oz. 1
Boric acid.....	av.oz. 10
Talcum	av.oz. 12
Oil of eucalyptus.....	fl.dr. 2
Prepare like No. I.	

FOOT LOTIONS.

Instead of foot powders, lotions may be recommended but they have not proven so popular. They are, however, useful adjuncts to the powders. For example it is advisable to bathe the feet every night in hot water containing an antiseptic such as boric acid, potassium permanganate or sodium perborate. The latter may be used as a 2% solution, potassium permanganate as a 1% solution, and boric acid in the saturated form. In case it is not possible to change socks or stockings every morning, the latter may be soaked at bedtime with the boric acid solution and hung up to dry over night. Other applications that may be used are these:

I.

Boric acid.....	dr. 1
Borax	dr. 2

Salicylic acid.....	dr. 4
Glycerin	fl.oz. 6
Alcohol	fl.oz. 9
Perfume	to suit

Dissolve the boric acid and borax in the glycerin by the aid of heat, the salicylic acid in the alcohol, mix the two solutions, add any desired perfume, and filter.

This may be applied to the feet night and morning.

II.

Formaldehyde	fl.oz. 3
Tincture of nutgall.....	fl.dr. 4
Cologne water.....	fl.oz. 2
Diluted alcohol.....	fl.oz. 3

This is to be daubed on the feet with a pledget of cotton at night.

ARM-PIT POWDER AND PASTE.

Any of the foot powders may be used as an armpit powder to prevent perspiration and to overcome the odor. The following is specially adapted for this purpose:

Salicylic acid.....	gr. 45
Zinc oxid.....	av.oz. 1
Orris root.....	av.oz. 2
Talcum	av.oz. 7
Cumarin	gr. 1
Oil of bergamot.....	drops 10
Oil of rose	drops 20
Tincture of musk.....	drops 5
Solution of carmine.....	to color

Reduce the solids to fine powder, mix thoroughly with the other ingredients, and pass through a fine sieve. The solution of carmine may be omitted and the perfume changed. See Chapter II under face powders for nice perfume mixtures for this purpose.

Pastes for perspiration are the following:

I.

Salicylic acid.....	dr. 2
Corn starch.....	av.oz. 13
Mucilage of tragacanth, to make a paste.	

II.

Carbolic acid.....	gr. 30
Burnt alum.....	dr. 2
Talcum	dr. 2
Orris root.....	av.oz. 1
Corn starch	av.oz. 10
Violet extract.....	fl.dr. 2
Glycerin, to make a paste.	

MANICURE OR FINGER-NAIL COSMETICS.

Cosmetic preparations intended for the finger-nails and finger-tips are now used a great deal and this work would not be complete without formulas for these articles. They include cleaners, polishes, and varnishes.

Nail Bleach and Wash. (Nail-Cleaning Liquid)**I.**

Oxalic acid.....dr. 1
Rose water.....fl.oz. 2

Apply to the discolored nails with friction by means of soft leather or flannel.

Citric or acetic acid may be substituted for the oxalic acid.

II.

Tartaric acid.....dr. 1
Tincture of myrrh.....fl.dr. 1
Cologne water.....fl.dr. 2
Distilled water, to make.....fl.oz. 3

Dissolve the acid in water, add the other ingredients, and strain.

Dip the nails in this solution, wipe nearly dry, and polish with a chamois pad (buffer).

III.

Diluted sulfuric acid.....fl.dr. 4
Tincture of myrrh.....fl.dr. 2
Water, to make.....fl.oz. 2
Use like the preceding.

IV. Sodium perborate is highly recommended as a nail bleach. Mix one teaspoonful with about $1\frac{1}{4}$ ounces of lukewarm water, and apply the liquid to the finger nails with a nail brush, rubbing for a few minutes. The powder may also be sprinkled dry on the nails and then rubbed with a damp brush, but the first-mentioned method is the most satisfactory.

Sodium perborate is to be preferred to hydrogen peroxid because its alkaline character enables it to dissolve the fatty matter of the nails and thus exert its bleaching agent, while the peroxid is always acid and has but little action on the nails.

Nail Ointment.

White petrolatum.....av.oz. 4
White castile soap, powder.av.oz. $\frac{1}{2}$
Oil of bergamot or other
perfumesufficient

This is used for softening the nails, curing hang-nails, etc. It is to be applied at night, the fingers being covered with gloves.

Nail Polishes.

I. Different preparations of tin have been used successfully for cleansing and polishing finger nails, probably on account of their detergent and astringent qualities. The use of tin oleate has been highly recommended for imparting a luster to the nails, and when colored with a little carmine, gives to them a roseate tint. The oleate is prepared as follows: To a solution of white castile soap in warm water, 1 av. ounce to the pint, gradually add a 10% solution of tin chlorid until it ceases to produce a precipitate. The insoluble substance formed, after being washed and dried, is tin oleate. It is a soft solid, and is used without further preparation, unless, as stated, it be tinted with carmine. It may be perfumed if desired.

II. Another polish for finger nails is tin stearate. It is superior to the oleate, being stiffer and thus nicer to use. It may be prepared like the oleate by precipitation, using solutions of sodium or potassium stearate and tin chlorid. This may be tinted with carmine if desired. If a cheaper preparation is wanted, it can be mixed with equal parts of zinc oxid.

III.

Putty powder.....av.oz. 4
Carminegr. 10
Oil of rose.....drops 3
Oil of neroli.....drops 3

Triturate the putty powder and carmine together to a very fine powder, then incorporate with the oils.

IV. Sodium perborate in nail powders acts as a slow bleach and improves the luster, as in the following:

Putty powder.....av.oz. 4
 Sodium perborate.....dr. 2
 Carminegr. 30
 Perfumeto suit
 Prepare like the preceding.

V

Eosingr. 40
 White wax.....dr. 2
 Spermacetidr. 2
 Paraffin wax.....av.oz. 4

Melt the waxes at a gentle heat and incorporate the eosin. The latter should be in very fine powder, or should be

dissolved in a small amount of alcohol in which case the heat must be continued till all the alcohol has evaporated.

Nail Varnish or Enamel.

Paraffin wax.....dr. 1
 Chloroformfl.oz. 2
 Oil of rose.....drops 3

Polish the nails in the usual manner, apply the varnish, and rub with chamois skin or buffer.

PART V.

SODA WATER PREPARATIONS.

The following include the latest creations of the soda dispensers' art, and comprise those beverages which have been found most popular with the public, in recent years.

Alhambra Cream.

Prepare a syrup as follows:

Peach syrup	fl.oz. 2
Orange syrup	fl.oz. 6
Vanilla syrup	fl.oz. 9
Cream	fl.oz. 7

In serving, draw about 1 ounce of this syrup into a 12-ounce glass, fill the glass half full with the coarse stream of carbonated water, and "finish" with the fine stream.

Alhambra Syrup.

Peach syrup	fl.oz. 3
Orange syrup	fl.oz. 8
Vanilla syrup	fl.oz. 12
Cream, to make	fl.oz. 32

Serve "solid" in 8-ounce glasses or with foam in 12-ounce glasses.

Almond Chocolate.

Almond essence	fl.dr. 1
Chocolate syrup	fl.oz. 32

Serve with cream or ice cream in 12-ounce glasses.

Angel Food.

Vanilla syrup	fl.oz. 1
Red orange syrup	fl.oz. 1
Ice cream	oz. 2
Shaved or cracked ice	soda glassful $\frac{1}{4}$

Shake together in the usual manner, strain into a 12-ounce glass, nearly fill the latter with the coarse stream of carbonated water, and "finish" with the fine stream.

Angostura Phosphate.

Prepare a lemon phosphate in the usual manner, then add two dashes of angostura bitters.

Ariom.

Apricot syrup	fl.oz. $\frac{1}{2}$
Peach syrup	fl.oz. $\frac{1}{2}$
Rose syrup	fl.oz. $\frac{1}{2}$
Cream	fl.oz. 2

Shaved or cracked ice

soda glassful $\frac{1}{2}$
Shake together the same as any other egg drink, strain into a 12-ounce glass, add the coarse stream of carbonated water to nearly fill the glass, and "finish" with the fine stream of carbonated water.

Arosia.

Pineapple juice	fl.oz. 2 $\frac{1}{2}$
Plum extract	fl.dr. $\frac{1}{2}$
Quince extract	fl.dr. $\frac{1}{2}$
Solution of citric acid	fl.dr. 1
Soda foam	fl.dr. 2
Soda syrup	fl.oz. 32
Yellow coloring, to color light yellow.	

Serve like other soda syrups, in 12-ounce glasses, with or without ice cream.

Bimbo Flip.

Strawberry syrup	fl.oz. 1 $\frac{1}{2}$
Ginger syrup	fl.oz. 1
Lime juice	fl.oz. $\frac{1}{4}$
Egg	1

Prepare and serve like other egg drinks.

Bisque Syrup.

Roasted almonds	av.oz. 4
Extract of vanilla	fl.dr. $\frac{1}{2}$
Soda syrup	fl.oz. 32

Break up the almonds to coarse powder, boil for a few minutes with about 8 ounces of the syrup, allow to cool, strain, and add the extract and the remainder of the syrup.

This is to be served in 12-ounce glasses with or without ice cream.

Blizzardine.

Orgeat syrup	fl.oz. 1
Catawba syrup	fl.oz. $\frac{1}{2}$

Ice cream.....tablespoonful 1
 Shaved or cracked
 icesoda glassful $\frac{1}{2}$
 Shake together in a shaker, strain
 into a 12-ounce glass, nearly fill the
 glass with the coarse stream of car-
 bonated water, and "finish" with the
 fine stream.

Bonnie Belle Cream.

Pineapple syrup.....fl.oz. $\frac{3}{4}$
 Vanilla syrup.....fl.oz. $\frac{3}{4}$
 Ice cream.....oz. 2
 Egg 1
 Shaved or cracked
 icesoda glassful $\frac{1}{4}$
 Shake in a shaker, or glass and
 shaker, strain into a 12-ounce glass,
 nearly fill the latter with the coarse
 stream of carbonated water, and "finish"
 with the fine stream.

Brunswick Cooler.

Lemon syrupfl.oz. $\frac{1}{2}$
 Orange syrup.....fl.oz. $\frac{1}{2}$
 Cherry syrup.....fl.oz. $\frac{1}{2}$
 Shaved or cracked ice....glassful $\frac{1}{4}$
 Add carbonated water, coarse stream,
 to nearly fill a 12-ounce glass, "finish"
 with the fine stream and dress the
 drink with pineapple and cherry fruit.

Caramel Syrup.

Extract of coffee.....fl.dr. $1\frac{1}{2}$
 Extract of vanilla.....fl.dr. $\frac{1}{2}$
 Caramelfl.dr. 1
 Chocolate syrup.....fl.oz. 8
 Soda syrup, to make.....fl.oz. 32
 Serve in 12-ounce glasses with or
 without ice cream.

Carnation Flip.

Pineapple syrup.....fl.oz. 1
 Strawberry (or raspberry)
 syrupfl.oz. 1
 Creamfl.oz. 4
 Ice cream.....spoonful 1
 Egg 1
 Shaved or cracked
 icesoda glassful $\frac{1}{4}$
 Shake in a shaker, or glass and
 shaker, strain into a 12-ounce glass, fill
 the latter with the coarse stream of car-
 bonated water and sprinkle on some
 powdered nutmeg.

Carnation Float.

Make a plain lemonade in the usual
 manner, fill the glass to within an inch

of the top, then in the center of the
 glass hold the spoon upright, and down
 the side of the latter slowly pour in
 grape juice until the glass is full.

Catawba Frappe.

Catawba syrup.....fl.oz. 2
 Orange syrup.....fl.oz. $\frac{1}{2}$
 Draw into a 12-ounce glass, add
 shaved ice to half fill the glass, add
 water to nearly fill the latter, then fill
 with carbonated water, stir with a spoon
 and serve with straws.

Cherry Egg Bounce, Hot.

Egg 1
 Cherry juice.....fl.oz. 2
 Sugar, powder.....spoonful 1
 Mix thoroughly in an 8-ounce mug,
 fill up the latter with hot water, mix
 again, add several cherries, a slice of
 orange, and a sprinkle of nutmeg.

Chinese Punch.

Shaved or cracked
 icesoda glassful $\frac{1}{2}$
 Tea syrup.....fl.oz. 2
 Carbonated water, coarse stream, to
 fill the glass. Stir with a spoon and
 serve with straws.

Chocolate Frappe.

Chocolate syrup.....fl.oz. $1\frac{1}{2}$
 Ice cream.....oz. 2
 Creamfl.oz. 2
 Mix thoroughly in a 12-ounce glass,
 nearly fill the latter with the coarse
 stream of carbonated water, and "finish"
 with the fine stream.

Chocolate Nectar.

Vanilla extract.....fl.dr. $\frac{1}{2}$
 Orange flower water.....fl.dr. 4
 Chocolate syrup, to make...fl.oz. 32
 Carmine solution to color reddish-
 brown.

Draw 2 ounces of this into an 8-ounce
 glass, add one ounce of cream, and fill
 the glass with the coarse stream of
 carbonated water.

Chocolate Punch.

Chocolate syrup.....fl.oz. 2
 Egg 1
 Shaved or cracked
 icesoda glassful $\frac{1}{4}$
 Milk, enough to fill a 12-ounce glass.
 Shake together, strain into a 12-ounce

glass, fill the latter with the fine stream of carbonated water, and add some whipped cream.

Claret Glace (Claret Klondike.)

Fill a sherbet glass with finely shaved ice, pour on an ounce of claret syrup, and garnish with a thin slice of lemon. Serve with a sherbet spoon.

Claro.

Juice of lemons.....	3
Strawberry juice.....fl.oz.	4
Raspberry juice.....fl.dr.	4
Solution of citr' acid.....fl.dr.	6
Soda foam.....fl.dr.	4
Soda syrup.....fl.oz.	48

Serve like other soda syrups with or without ice cream, in 12-ounce glasses.

Coffee Maltrose.

Coffee syrup.....fl.oz.	1½
Egg	1
Malted milk.....teaspoonful	1
Cream	fl.oz. 1½
Cracked or shaved ice	soda glassful ½

Shake together, strain into a 12-ounce glass, nearly fill the latter with the coarse stream of carbonated water, and "finish" with the fine stream.

Coney Fizz

Orange syrup.....fl.oz.	1
Strawberry syrup.....fl.oz.	1
Juice of one-half lemon.	
Shaved or cracked ice	soda glassful ¼

Shake together in a shaker, strain into a 12-ounce glass, nearly fill the glass with the coarse stream of carbonated water, "finish" with the fine stream, and decorate with fruit.

Creme-de-Swift.

Vanilla syrup.....fl.oz.	½
Strawberry syrup.....fl.oz.	1
Cracked or shaved ice....glassful	¼
Milk, enough to fill a 12-ounce glass.	

Shake well, strain, and top with whipped cream.

Cream Cordial.

Rose syrup.....fl.oz.	½
Pineapple syrup.....fl.oz.	½
Vanilla syrup.....fl.oz.	½
Orange syrup.....fl.oz.	½
Cream	fl.oz. 1
Shaved or cracked ice	soda glassful ¼

Shake in a shaker, strain into a 12-ounce glass, nearly fill the glass with the coarse stream of carbonated water, and "finish" with the fine stream.

Cream Pineapple.

Crushed pineapple.....fl.oz.	1½
Cream	fl.oz. 2
Crushed or shaved ice....glassful	¼

Shake together, strain into a 12-ounce glass, add carbonated water, coarse stream, to nearly fill the latter, and "finish" with the fine stream.

Crescent Sherbet.

Pineapple syrup.....fl.oz.	16
Orange syrup.....fl.oz.	16
Vanilla syrup.....fl.oz.	12
Sherry wine.....fl.oz.	4

Serve as a "solid" drink in 8-ounce glasses, using 1 or 1½ ounces of this syrup and filling the glass with the coarse stream of carbonated water.

Cubanade.

Orange syrup.....fl.oz.	1
Grape juice.....fl.oz.	½
Lemon juice.....fl.dr.	1
Essence of ginger.....	a few drops

Put into a 12-ounce glass, nearly fill the latter with the coarse stream of carbonated water, and "finish" with the fine stream.

Egg-a-la-Mode.

Orange syrup	fl.oz. ½
Peach syrup.....fl.oz.	½
Pineapple syrup.....fl.oz.	½
Lemon syrup.....fl.oz.	½
Egg	1
Shaved or cracked ice	soda glassful ¼

Shake in a shaker, or glass and shaker, strain into a 12-ounce, nearly fill the glass with the coarse stream of carbonated water, and "finish" with the fine stream.

Egg Cocoa.

Chocolate syrup.....fl.oz.	1
White and yolk of egg.....	1
Cracked or shaved ice.....	small quantity

Shake well in a shaker, or glass and shaker, strain into 12-ounce glass, nearly fill the latter with the coarse stream of carbonated water, and "finish" with the fine stream.

Egg Soda.

Lemon syrup.....	fl.oz. 1/2
Vanilla syrup.....	fl.oz. 1/2
Cream	fl.oz. 1
Egg	1
Shaved or cracked ice.....	about tablespoonful 1

Shake in a shaker or a glass and shaker, strain into a 12-ounce glass, fill the latter three-fourths with the coarse stream of carbonated water, and "finish" with the fine stream.

Elks' Delight.

Juice of one-half orange.	
Juice of one-half lemon.	
Grape juice.....	fl.oz. 1/2
Sugar, powder.....	teaspoonful 2
Shaved or cracked ice	soda glassful 1/4

Plain water, enough to fill a 12-ounce glass.

Strain, add a cherry and a slice of orange, and serve with straws.

Fancy Lemonade.

Make a soda lemonade in the usual manner, and add a teaspoonful of raspberry or strawberry syrup, which will sink to the bottom of the liquid. Then carefully pour in a teaspoonful of grape juice, and serve without stirring. A piece of pineapple, orange or other fruit may be added to decorate the drink. It may also be served in a glass half-full of shaved ice. Serve with straws.

Fantasma Nog.

Wild cherry syrup.....	fl.oz. 1 1/2
Egg	1
Ice cream.....	spoonful 1
Solution of acid phosphate.....	dashes 2
Shaved or cracked ice	soda glassful 1/4

Favorita.

Strawberry juice.....	fl.oz. 4
Maple syrup.....	fl.oz. 16
Juice of 6 lemons.	
Soda foam.....	fl.oz. 1
Soda syrup, to make.....	gal. 1/2

Serve like other soda syrups in 12-ounce glasses with or without ice cream.

Frosted Chocolate.

Chocolate syrup.....	fl.oz. 1 1/2
Shaved ice.....	glassful 1/2
Carbonated water, coarse stream, about.....	fl.oz. 6

Mix by stirring, strain into a 12-ounce glass, and filter the latter with the fine stream of carbonated water.

Frosted Coffee.

Coffee syrup.....	fl.oz. 2
Cream	fl.oz. 2
Shaved or cracked ice.....	soda glassful 1/2

Shake thoroughly in a combination shaker or in a glass and shaker, strain into a 12-ounce glass, fill the glass with the coarse stream of carbonated water, stir thoroughly, add a spoonful of whipped cream, and sprinkle lightly with nutmeg. Ice cream may be used instead of whipped cream.

Frozen Cream.

Banana syrup.....	fl.oz. 2
Cream	fl.oz. 8
Shaved or cracked ice.....	soda glassful 1/2

Shake together in a shaker, strain into a 12-ounce glass, add a few pieces of banana, fill the glass with the fine stream of carbonated water, and serve with a spoon and straws.

Fruit Lemonade.

Crushed ice.....	glassful 1
Sugar, powdered.....	tablespoonfuls 2
Juice of one-half lemon.	
Juice of one-half orange.	
Lemon	slice 1
Orange	slice 1
Pineapple	slice 1/2
Orange flower water.....	drops 2

Prepare and serve like plain lemonade.

Fruit Malt.

Malt extract, thick.....	fl.oz. 6
Raspberry syrup.....	fl.oz. 2
Cinnamon syrup.....	fl.oz. 2
Rose syrup.....	fl.oz. 2
Orange flower water.....	fl.dr. 2
Orange syrup.....	fl.oz. 12

This may be served as a "soda" drink with foam in 12-ounce glasses or "solid" in 8-ounce glasses or as a "phosphate."

Fruit Nectar.

Raspberry syrup.....	fl.oz. 16
Grape syrup.....	fl.oz. 16
Raspberry vinegar.....	fl.oz. 2

Serve this as a "solid" drink in 8-ounce glasses, adding shaved ice if desired.

Fruit Shrub.

Pineapple juice.....fl.oz. 1
 Grape juice.....fl.oz. 1
 Raspberry juice.....fl.oz. 1
 Extract of vanilla.....fl.dr. ½
 Solution of citric acid.....fl.dr. 2
 Soda syrup, enough to
 makefl.oz. 32
 Serve like other soda syrups in 12-ounce glasses, with or without ice cream.

Ginger Bouquet.

Soluble essence of ginger...fl.dr. 10
 Solution of citric acid.....fl.dr. 4
 Essence of sarsaparilla.....fl.dr. 4
 Extract of vanilla.....fl.dr. 4
 Soda syrup, to make.....fl.oz. 32
 Caramel.....enough to color
 Serve this as a "solid" drink in 8-ounce glasses. Shaved ice may be added.

Ginger Wine Toddy, Hot.

Ginger syrup.....fl.oz. ½
 Tea syrup.....fl.oz. 1
 Currant juice.....fl.oz. ½
 Draw into an 8-ounce mug, fill the latter with hot water, and add grated cinnamon.

Golden Buck.

Yolk of egg..... 1
 Orange syrup.....fl.oz. 2
 Solution of acid phosphates.dashes 2
 Shaved or cracked
 ice.....soda glassful ¼
 Shake together in a shaker, or in a glass and shaker, strain into a 12-ounce glass, nearly fill the glass with the coarse stream of carbonated water, and "finish" with the fine stream.

Granola.

Orange syrup.....fl.oz. 1
 Grape juice.....fl.oz. ½
 Juice of one-half lemon.
 Cracked or shaved
 ice.....soda glassful ⅓
 Mix in a 12-ounce glass, nearly fill the latter with the coarse stream of carbonated water, and "finish" with the fine stream. Serve with straws.

Grape-Ade.

Lemon syrup.....fl.oz. 1
 Grape juice.....fl.oz. ½
 Serve "solid" in 8-ounce glasses, filling the latter with the coarse stream of carbonated water, and stirring with a spoon.

Grape Cooler.

Grape juice.....fl.oz. 1
 Orange syrup.....fl.oz. 1½
 Lemon syrup.....fl.oz. ¼
 Solution of acid phosphate..dash 1
 Shaved or cracked
 ice.....soda glassful ¼
 Mix in a 12-ounce glass, fill the latter with the coarse stream of carbonated water, stir with a spoon, add a slice of pineapple, and serve with straws.

Grape Cup.

Grape juice.....fl.oz. 32
 Infusion of tea.....fl.oz. 32
 Lime juice.....fl.oz. 8
 Solution of acid phosphate..fl.oz. 1
 Keep cool with ice, serve in glasses three-fourths full, and fill with the coarse stream carbonated water.
 By infusion of tea is meant "tea" as it is made for household purposes, preferably using a good grade of tea like English breakfast, pekoe, souchong, etc.

Grape Egg Phosphate.

Make an egg phosphate in the usual manner and add a tablespoonful of grape juice before serving.

Grape Glace.

Grape juicefl.oz. 8
 Waterfl.oz. 8
 Whites of 1 or 2 eggs.
 Sugar, powder.....av.oz. 16
 Beat the egg-white with some of the sugar, then add the mixed juice, water, and the remainder of the sugar.

Keep in a small pitcher or berry dish. Serve with a spoon.

This must be made fresh every day.

Grape Lemonade.

Grape syrup.....fl.oz. ½
 Lemon syrup.....fl.oz. ½
 Solution of acid phosphates.dash 1
 Serve as a "solid" drink with the coarse stream of carbonated water.

Grape Orange.

Prepare like the preceding, substituting orange syrup for the lemon syrup.

Grape Sherbet.

Orange syrup.....fl.oz. 2
 Grape juice.....fl.oz. 2
 Draw into a 12-ounce glass, half fill

the latter with shaved ice, then fill it with plain water, stir with a spoon, and serve with straws.

Hasty Pudding.

Crushed strawberries.....oz. $\frac{1}{2}$

Crushed peachesoz. $\frac{1}{2}$

Ice cream, to fill a small glass or sherbet cup.

Serve with a spoon.

Heavenly Twins.

Ice cream.....spoonful 1

Lemon ice.....spoonful 1

Put side by side on a decorated plate, place over it some crushed fruit, and serve with wafers.

Herculine.

Spirit of orange.....fl.oz. 1

Tincture of vanilla.....fl.oz. 1

Tincture of citrochlorid of

ironfl.oz. 1

Solution of acid phosphate.....fl.oz. 2

Soda syrup, to make.....gall. $\frac{1}{2}$

Caramel, enough to color light brown.

This is a tonic syrup, one ounce of which is to be served with carbonated water as a "solid" drink in 8-ounce glasses.

Hokey-Pokey Glace.

Nectar syrup.....fl.oz. 1

Creamfl.oz. $\frac{1}{2}$

Carbonated water fine

streamsoda glassful $\frac{3}{4}$

Finely shaved ice, enough to fill the glass.

Add some whipped cream and serve with a spoon.

Ice Cream Sandwiches.

These are made by spreading a thin layer of ice cream between two sugared vanilla wafers.

Another way of preparing them is to have thin cakes like vanilla wafers of the size of the brick ice cream moulds, spread on them thin layers of raspberry or apricot jam, cut brick ice cream into slices, lay a slice between the layers of cake, and place the whole in the ice cream cabinet until needed.

Ice Cream Shake.

Marshmallow syrupfl.oz. 1

Egg 1

Ice creamoz. 1

Shake together in a shaker, or glass and shaker, strain into a 12-ounce glass, nearly fill the latter with the coarse stream of carbonated water, and "finish" with the fine stream.

Idlewild.

Strawberry syrupfl.oz. 10

Orange syrupfl.oz. 10

Pineapple syrupfl.oz. 10

Lemon juicefl.oz. 2

Draw $1\frac{1}{2}$ ounces of this into a 12-ounce glass one-third filled with shaved ice, then fill the glass with the coarse stream of carbonated water, add a few strawberries, a slice of pineapple and a slice of orange, and serve with straws.

Independence Tonic.

Coffee syrupfl.oz. 8

Elixir of coca.....fl.oz. 4

Tincture of cinchona.....fl.oz. 2

Madeira wine.....fl.oz. 2

Raspberry syrupfl.oz. 16

Serve "solid" in 8-ounce glasses, drawing 1 or $1\frac{1}{2}$ ounces of this syrup and filling the glass with the coarse stream of carbonated water.

Kola Celery Tonic.

Fluid extract of kola.....fl.dr. 1

Tincture of celery seed.....fl.dr. 4

Solution of citric acid.....fl.dr. 3

Raspberry juicefl.oz. 1

Soda syrup, to make.....fl.oz. 32

Serve "solid" in 8-ounce glasses, using about 1 ounce of this syrup.

Kola Syrup.

Fluid extract of kola (from

fresh nuts)fl.dr. 2

Claret winefl.oz. 12

Raspberry juicefl.oz. $1\frac{1}{2}$

Solution of acid phosphates.....fl.oz. 4

Solution of citric acid.....fl.oz. 2

Soda syrup, to make.....gall. $\frac{1}{2}$

Solution of carmine, to color deep red.

Serve "solid" in 8-ounce glasses, using about 1 ounce of this syrup and filling the glass with the coarse stream of carbonated water.

Kolasaya.

Blood orange syrup.....fl.oz. 16

Raspberry syrupfl.oz. 8

Wine of kola.....fl.oz. 4

Elixir of calisaya.....fl.oz. 4

Mix well and filter.

In serving, draw 2 ounces of this

syrup in a 12-ounce glass, add cracked or shaved ice, and fill with the coarse stream of carbonated water. Top off with same fresh raspberries or a piece of orange.

Ladies' Choice.

Raspberry syrupfl.oz. 2
Peach ice cream...tablespoonfuls 2

Serve in 12-ounce glasses like any "soda" drink with the coarse and fine streams of carbonated water.

Lime Juice Fizz, Hot.

White of egg..... 1
Lime juicefl.oz. 1
Sugar, powderspoonfuls 2

Mix in an 8-ounce mug, fill the latter with hot water, and add some whipped cream.

Lime Slip.

Pineapple syrupfl.oz. 2
Lime juicefl.oz. ½

Serve "solid" in 8-ounce glasses, adding a slice of orange.

Manhattan Cream.

Pineapple syrupfl.oz. ¾
Vanilla syrupfl.oz. ¾
Ice creamoz. 2
Egg 1
Shaved or cracked

icesoda glassful ¼

Shake in a shaker or glass and shaker, strain into a 12-ounce glass, nearly fill the latter with the coarse stream of carbonated water, and "finish" with the fine stream.

Oriental Fizz.

Strawberry syrup fl.oz. 1
Orange syrupfl.oz. 1
Juice of one-half lemon.
Shaved or cracked

icesoda glassful ¼

Mix in a 12-ounce glass, fill the latter with the coarse stream of carbonated water, stir with a spoon, and serve with straws.

Over the Waves.

Lemon syrupfl.oz. 1½
Grape juicefl.oz. 1
White of one egg.

Solution of acid phosphates.fl.dr. ½
Cracked or shaved

icesoda glassful ¼

Shake in a shaker or glass and shaker,

strain into a 12-ounce glass, nearly fill the latter with the coarse stream of carbonated water, and "finish" with the fine stream.

Orange Chocolate.

Extract of vanilla.....fl.dr. 2
Orange-flower waterfl.dr. 4
Chocolate syrup, to make...fl.oz. 32

This may be served with cream or ice cream in 12-ounce glasses.

Orange Ferrone.

Orange syrupfl.oz. 16
Raspberry syrupfl.oz. 8
Vanilla syrupfl.oz. 4
Elixir gentian with iron...fl.oz. 4

Serve "solid" in 8-ounce glasses, using 1½ or 2 ounces of this syrup.

Orange Mint.

Half fill a 12-ounce glass with cracked ice, draw in 2½ ounces of orange syrup, fill with the coarse stream of carbonated water, add a dash of essence of peppermint and a slice of orange, stir with a spoon, and serve with a straw.

Pan-American Lemonade.

Orange syrupfl.oz. 1
Lemon syrupfl.oz. 1
Sugar, powdered.....teaspoonful 1
Solution of acid phosphate...dash 1
Shaved or cracked

icesoda glassful ¼

Fill the glass with the coarse stream of carbonated water, add two slices of orange, and serve with two straws.

Pepsin Phosphate.

Glycerite of pepsin, N. F...fl.oz. 4
Raspberry syrupfl.oz. 8
Solution of acid phosphate..fl.oz. 2
Soda syrup, to make.....fl.oz. 32

Serve "solid" in 8-ounce glasses, like other phosphates.

Phantom Bouquet.

Vanilla syrupfl.oz. 4
Pineapple syrupfl.oz. 8
Orange syrupfl.oz. 12
Orange-flower waterfl.oz. 1

Serve in 8 or 12-ounce glasses with cream.

Pierian Spring Syrup.

Take one orange, cut into cubes, leaving the peel on; one peach, remove the peel and stone and crush the meat; one banana, remove the peel, and cut the

inner part into cubes; one-half pineapple, remove the peel and grate the meat; one dozen strawberries, remove the calyces and crush; mix all with a half-gallon of soda syrup, previously colored red.

To serve, put ice cream in the bottom of a glass, add about an ounce of this syrup, and fill the glass with the fine stream or carbonated water.

Pineapple Ale.

Soluble essence of ginger...f.oz. 2
Pineapple juicef.oz. 2
Solution of citric acid.....f.dr. 2
Soda syrupf.oz. 24

Serve "solid" in 8-ounce glasses like the "phosphates."

Pineapple Bonbon.

Fill a sherbet glass nearly full with crushed pineapple, place a spoonful of finely shaved ice, add a ladleful of crushed pineapple, place a spoonful of ice cream on top of all, and serve with a sherbet spoon.

A similar "bonbon" may be made with any other kind of crushed fruit.

Pineapple Frappe.

Cracked or shaved
icesoda glassful $\frac{1}{2}$
Crushed pineapplef.oz. 2
Solution of acid phosphates.f.dr. 1

Mix in a 12-ounce glass, fill the glass with carbonated water, stir with a spoon, and strain into an 8-ounce glass.

Pineapple Lemonade.

Juice of one lemon.
Pineapple syrupf.oz. 2
Carbonated water, to fill a 12-ounce glass.

Mix well, dress with fruit, and serve with straws.

Pineapple Paulette.

Pineapple syrupf.oz. $1\frac{1}{2}$
Ice creamoz. 2
Creamf.oz. $1\frac{1}{2}$
Cracked or shaved
icesoda glassful $\frac{1}{4}$

Shake together in a shaker, strain into a 12-ounce glass, add carbonated water, coarse stream, to nearly fill the glass, and "finish" with the fine stream.

Pineapple Punch.

Pineapple juicef.oz. 2
Sugar, powderedspoonful 1
Shaved ice, soda glassful..... $\frac{1}{2}$

Mix with a spoon, add 3 ounces of the coarse stream of carbonated water, add a little more shaved ice and a spoonful of crushed pineapple on top. Fill the glass with shaved ice, add a slice of pineapple, and serve with a spoon and straws.

Pineapple Snow.

Pineapple syrupf.oz. 1
Sugar, powder.....teaspoonful 1
Cracked or shaved

ice.....soda glassful $\frac{1}{2}$
Add some carbonated water, stir in a shaker, strain into an 8-ounce glass, fill the latter with the coarse stream of carbonated water, stir again, add a slice of pineapple or some crushed pineapple, and serve with straws.

Another article of the same name is a mixture of cracked or shaved ice, cream and pineapple syrup, with or without carbonated water, the whole being topped off with shaved ice and dispensed in a glass with a spoon.

Pink-Ade.

Cranberry syrupf.oz. 16
Juice of $1\frac{1}{2}$ lemons.
Solution of citric acid.....f.dr. $\frac{1}{2}$
Solution of acid phosphates.f.dr. 2
Soda syrupf.oz. 32

If necessary add cochineal coloring to impart a pinkish tint to the mixture.

Serve "solid" in 8-ounce glasses like the "phosphates."

Pink Tea, Hot.

Green teaav.oz. 1
Black teaav.oz. 1
Waterf.oz. 16
Sugarav.oz. 10

Make an infusion of the two teas with the water, strain in the liquid, dissolve the sugar, strain again, and color the liquid with tincture of cudbear.

In serving, put 1 ounce into an 8-ounce mug, fill the latter with hot water, and add a slice of lemon.

Raspberry Royal.

Raspberry syrupfl.oz. 1½
 Raspberry vinegarfl.oz. ½
 Cracked or shaved
 icesoda glassful ¼

Mix in a 12-ounce glass, nearly fill the latter with the coarse stream of carbinated water, and "finish" with the fine stream. Serve with straws.

Raspho.

Raspberry syrupfl.oz. ¾
 Orange syrupfl.oz. 1¼
 Tincture of ginger.....dash 1
 Solution of acid phosphates..dash 1

Mix in 12-ounce glasses, using some shaved ice and the coarse stream of carbonated water. Serve with straws.

Root Bear, Hot.

Mix one fluidounce of root beer extract with 7 fluidounces of soda syrup. Use 1½ fluidounces of this syrup to enough hot water to fill an 8-ounce mug. Add a slice of lemon or a few drops of lemon juice.

Root Beer Cream.

Fill a 12-ounce glass to within one inch of the top with root beer drawn "solid," then float on enough plain cream to fill the glass. Serve without straws.

Samaritan Punch.

White and yolk of egg..... 1
 Cracked or shaved
 ice..... soda glassful ¼
 Nectar syrupfl.oz. 2
 Milksoda glassful ¾

Agitate in a shaker or in a glass and shaker, strain into a 12-ounce glass, and add some grated nutmeg.

Snow Top.

Orgeat syrupfl.oz. 1
 Creamfl.oz. 2
 White of egg..... 1
 Shaved or cracked ice....sufficient
 Prepare like other egg drinks.

Square Meal.

Chocolate syrupfl.oz. 2
 Egg 1
 Ice cream.....spoonful 1
 Milk.....enough to fill a shaker

Shake well, strain into a 12-ounce glass, and sprinkle on some grated nutmeg.

Strawberry Cream Puff.

Put a large spoonful of ice cream in a glass, over it pour a ladleful of crushed strawberries. In another glass mix the contents of 1 egg, 1 ounce of strawberry syrup, and 1 ounce of plain cream, and add this to the mixture in the other glass. Serve with a spoon.

College Ice (Fruited Cream.)

This is simply a sundae served with crushed fruit.

Cantelope Sundae.

Cut a small-sized canteloupe in two, remove the seeds, and slice off a small portion from the bottom so that the half-sections will stand upright. Place in the half of the canteloupe the usual or desired amount of ice cream, on the latter put some crushed pineapple and whole cherries. Insert spoon upright in meat of canteloupe, place the latter upon a napkin and serve upon a fancy plate.

Sweet Clover.

Tea svrupfl.oz. 8
 Maple syrupfl.oz. 4
 Solution of acid phosphates.fl.dr. 2
 Soda svrupfl.oz. 24
 Color green with any suitable
 green color.

Serve "solid" in 8-ounce glasses like the "phosphates."

Turkish Punch, Hot.

Yolk of egg..... 1
 Grape juicefl.oz. 1
 Lemon juicefl.oz. ½
 Sugar, powderspoonfuls 2

Mix thoroughly in an 8-ounce mug, fill the latter with hot water, stir again, top off with whipped cream and sprinkle on some cinnamon.

Turkish Sherbet.

Crushed peachfl.oz. ½
 Nectar syrupfl.oz. ½
 Orange svrupfl.oz. ½
 Solution of acid phos-
 phatesdashes 4 or 5

Fill a 12-ounce glass with shaved ice, stir in the above sirupy mixture, garnish with a slice of pineapple and orange and a cherry, and serve with spoon and straws.

Tutti Fruitti.

Spirit of lemon.....	f.l.dr.	1
Spirit of orange.....	f.l.dr.	1
Tincture of vanilla.....	f.l.dr.	1
Maple syrup	f.l.oz.	1
Solution of citric acid.....	f.l.dr.	4
Soda syrup, to make.....	f.l.oz.	32

Serve with other soda syrups in 12-ounce glasses with or without ice cream.

Vanilla Puff, Hot.

Vanilla syrup	f.l.oz.	1
Cream	f.l.oz.	1
White of one egg.		

Shake well, strain in an 8-ounce mug, fill latter with hot water, and add whipped cream.

Violade.

Violet syrup	f.l.oz.	1
Lemon syrup	f.l.oz.	1
Carbonated water	f.l.oz.	8

Stir with a spoon, pour into another glass half filled with shaved ice, add two

slices each of lemon and orange, and serve with straws.

Wild Cherry Syrup.

Oil of bitter almonds.....	drops	6
Alcohol	f.l.dr.	4
Red cherry juice.....	f.l.oz.	8
Syrup of wild cherry,		
U. S. P.....	f.l.oz.	8
Diluted phosphoric acid.....	f.l.dr.	4
Tincture of cudbear.....	f.l.dr.	4
Caramel	dr.	1
Soda syrup, to make.....	gall.	½

Dissolve the oil in the alcohol and add the other ingredients.

Yabarra Chocolate.

Orange syrup	f.l.oz.	½
Chocolate syrup	f.l.oz.	1
Cream	f.l.oz.	2
Shaved or cracked		
ice.....	soda glassful	½

Fill the glass with milk, shake and strain.

PART VI.

DOMESTIC UTILITIES.

ACID-PROOF COATING.

The following recipes have been used in the preparations of coatings for acid tanks: (1) Asbestos powder, 2 parts; barium sulfate, 1 part; silicate of sodium solution (50° B.), 2 parts. This is resistant to the strongest acids. For weak acids use the silicate at 30° B. (2) Silicate of sodium solution, 2 parts; sand, 1 part; asbestos powder, 1 part. This is better than the first recipe when hot nitric acid has to be tanked. Either of these preparations will resist the action of sulfuric and nitric acids.

ADHESIVES.

See under headings Cements; Glues, Liquid; Mucilages; and Pastes.

ALCOHOL, DENATURED.

See Denatured Alcohol.

ALLOYS of Low Melting Point.

I. Newton's metal:

Bismuth	parts 8
Lead	parts 5
Tin	parts 3
This mixture melts at 95° C.	

II. Rose's metal:

Bismuth	parts 2
Lead	part 1
Tin	part 1
This mixture liquefies at 94° C.	

III. Wood's metal:

Bismuth	parts 15
Lead	parts 8
Tin	parts 4
Cadmium	parts 3
This mixture melts at 68° C.	

AMMONIA, Household or Domestic.

This is a combination of ammonia water with borax or other alkali, sometimes with oleic acid or soap, the object being to fortify the ammonia or to make it less volatile. If the ammonia be combined with oleic acid and hard water, a cloudy preparation is obtained.

The preparation may be perfumed, if intended for toilet purposes, with suitable essential oils or with a handkerchief extract. If not perfumed it is suitable for detergent purposes.

I.

Borax	av.oz. 1
Oil of cinnamon.....	drops 20
Oil of clove.....	drops 20
Oil of citronella.....	drops 20
Alcohol	fl.oz. 2
Ammonia water	gall. 1

Dissolve the borax in the ammonia and the oils in the alcohol, and mix the two solutions.

II.

Stronger ammonia water...	fl.oz. 40
Oleic acid	fl.oz. 8
Alcohol	fl.oz. 8
Distilled water, to make...	gall. 1

Mix all together and shake well. 1 or 2 ounces of borax may be added, also some oil of lavender flowers or handkerchief extract. If a cloudy preparation is desired, replace a portion of the distilled water with hydrant water, the proportion required depending on the amount of solids in the water.

III.

Castile or soft soap.....	av.oz. 8
Borax	av.oz. 4
Stronger ammonia water...	fl.oz. 32
Cologne water	fl.oz. 4
Water, to make.....	gall. 1

Mix all and dissolve the solids. This makes a cloudy preparation. The cologne water may be omitted, and if distilled water be used a clear liquid will then be obtained.

ANT EXTERMINATORS AND EXPELLERS.

As far as is known at the present time, ants do no harm directly but have the disagreeable habit of "getting into things," such as in the sugar, syrups,

sweets, etc., in pantries or on bread; in drug stores they occur commonly around the soda fountain.

Gum camphor, which may be in the form of pieces, laid about in different parts of the pantry or refrigerator will expel ants but all articles of food will be spoilt from absorption of the odor of the camphor. The articles of food might be temporarily removed. Another substance which has proved to be a successful ant exterminator is powdered borax, which is to be scattered freely on the pantry and refrigerator shelves and floor; it should also be blown or thrown into all crevices and corners.

Mustard, sulfur, alum and oil of cedar are also said to drive ants away, but the oil, like camphor, would be objectionable on account of its odor.

Ants are said to be partial to lard and a tray smeared with it will entangle many of them. Chloroform or gasoline sprayed into crevices or corners, or into their nests if found, will destroy them. Gasoline must be used with caution, owing to its inflammability, and therefore chloroform should be preferred.

A sponge moistened with weak syrup will entangle many ants which may then be killed by dipping the sponge in hot water.

Tartar emetic has also been recommended, used in a similar manner to borax. Balsam of peru is said to have been successful; it is to be smeared into all crevices, and on different places on the shelves and across their pathways. It has also been suggested to boil peru balsam with water, about one ounce to the gallon, and to wash the shelves and floor with this liquid while hot. Alum in hot solution may also be used in the same manner.

Ants at the soda fountain may be expelled by the same means as outlined above, strewing powdered borax about, smearing peru balsam into crevices, or washing shelves or other parts made of wood with the hot balsam water.

An experienced pharmacist claims to

have had excellent results in driving ants from the fountain by making a mixture of equal parts of tartar emetic and sugar into a thick paste with glycerin and distributing small particles of this where they can get at it.

Ants in the lawn, garden or field are easily destroyed by digging a sharp stick into the center of the hill and pouring into it from 1 to 4 ounces of carbon disulfid, then pressing the soil together again. The best time to destroy ants is immediately after a rain when the ground is cool and damp and there is less rapid absorption and volatilization of the sulfid. Chloroform will probably serve as well as carbon disulfid but would be objected to an account of its expensiveness if it has to be used extensively.

A patented ant and gopher exterminator (patented in 1880) is directed to be made as follows:

Alkanet root	oz. 2
Arsenous acid	oz. 2
Gum camphor	oz. 4
Iodin	oz. 1
Phosphorus	oz. 2
Sulfur	oz. 4
Carbon disulfid, to make.....	gal. 1

Pour some of this liquid, about 3 or 4 ounces, into the holes, set fire to the vapor, and after a moment cover the opening with the surrounding dirt.

ANTIDOTES TO POISONS.

The following are the poison antidotes approved by the California Board of Pharmacy:

Acid, Arsenous.—Emetic of mustard, hydrated oxid of iron a cupful, follow with olive oil or white of egg, mucilaginous drinks. Laudanum (20 drops) if much pain.

Acid, Carbolic.—Dilute alcohol or whisky and albuminous substances, milk, white of egg, etc.

Acid, Hydrocyanic.—Cold water to head and spine. Give stimulants. Inhalation of ammonia. Artificial respiration.

Acid, Muriatic; Acid, Nitric; Acid, Nitro-Muriatic; Acid, Sulphuric.—Give no emetics. Give at once large draughts and water or milk. Soft soap or soap and water, or white of egg beaten up with water, or give olive oil.

Acid, Oxalic.—Give chalk or whiting (a tablespoonful) or plaster off the wall suspended in water. Emetic of mustard, large draughts of warm water,

- olive oil, mucilaginous drinks, stimulants (whisky, etc.). Apply warmth to the extremities.
- Aconite, Its preparations or derivatives.**—Emetic of mustard followed by large draughts of warm water, then strong tea or coffee, or whisky. Keep patient in horizontal position. Keep up artificial respiration.
- Antimony, and Its preparations.**—(Tartar emetic)—Give emetics of mustard or zinc sulfate. Milk, white of egg freely mixed with water. Demulcent drinks.
- Antiseptic Tablets (Cor. Sub.).**—See Corrosive Sublimate.
- Arsenic.**—See Acid Arsenous.
- Belladonna, Its preparations or derivatives.**—Emetic of mustard followed by large draughts of warm water, then strong tea or coffee.
- Bromin.**—Arouse patient and keep him in motion.
If inhalation: Fresh air, inhalation of ammonia. If swallowed: Emetic, starch, followed by magnesia, sodium bicarbonate, white of egg, milk, flour and water.
- Cantharides.**—Avoid oils. Emetics first of all. Demulcents, stimulants. Employ artificial heat externally.
- Chloral Hydrate.**—Same as Chloroform.
- Chloroform.**—Horizontal position, cold water to head and stimulants. Emetic of mustard.
- Cocculus Indicus.**—Same as Aconite.
- Conium.**—Same as Belladonna.
- Corrosive Sublimate.**—Give white of egg or flour mixed with water, emetic of mustard. Give strong tea or coffee, stimulants (whisky, etc.). If needed, demulcent drinks.
- Corrosive Sublimate Tablets.**—Same as Corrosive Sublimate.
- Cotton Root and Its Preparations.**—Emetic of mustard followed with large draughts of warm water, strong tea or coffee, stimulants (whisky, etc.) freely. Keep patient in horizontal position, employ warmth to extremities, artificial respiration.
- Cowhage.**—Large doses of olive oil.
- Creosote.**—Emetic of mustard, white of egg beaten up with water, olive oil, magnesia, stimulants (whisky, etc.) freely, employ warmth and friction to the extremities.
- Croton Oil.**—Give white of egg or flour mixed with water, emetic of mustard. Give strong tea or coffee, stimulants (whisky, etc.). If needed, demulcent drinks.
- Cyanid of Potassium.**—Cold water to head and spine. Give stimulants. Inhalation of ammonia. Artificial respiration.
- Digitalis, Its preparations or derivatives.**—Emetics of mustard followed with large draughts of warm water, strong tea or coffee, stimulants (whisky, etc.) freely. Keep patient in horizontal position, apply warmth to extremities, artificial respiration.
- Ether.**—Horizontal position, cold water to head and stimulants. Emetic of mustard.
- Formaline, or Solution of Formaldehyde.**—Give ammonia in diluted solution with demulcent drinks. Also inhalations of ammonia.
- Fowler's Solution.**—Same as Arsenic.
- Gelsemium.**—Coffee, brandy, emetic of ipecac.
- Hyoscyamus, Its preparations or derivatives.**—Same as Belladonna.
- Indian Hemp.**—Same as Belladonna.
- Iodin and Its preparations.**—Give starch, white of egg or flour mixed with water, emetic of mustard. Give strong tea or coffee, stimulants (whisky, etc.). If needed, demulcent drinks.
- Lysol.**—Give white of egg, starch or flour mixed with water, emetic of mustard. Give strong tea or coffee, stimulants (whisky, etc.). If needed, demulcent drinks.
- Nitroglycerin.**—Cold to head. Horizontal position. Give emetics and cathartics. Ergot.
- Nux Vomica and Its preparation or derivatives.**—Same as Strychnine.
- Oil of Bitter Almonds, Essential.**—Cold water to head and spine. Give stimulants.
- Phosphorus and Its derivatives.**—Emetic of mustard, or blue vitriol 3 grains every five minutes until vomiting occurs. A teaspoonful old thick oil of turpentine (avoid other oils); also epsom salts, half ounce in tumblerful of water.
- Pennyroyal, Oil of.**—Give white of egg or flour mixed with water, emetic of mustard. Give strong tea or coffee, stimulants (whisky, etc.). If needed, demulcent drinks.
- Red Precipitate.**—Same as Corrosive Sublimate.
- Rue, Oil of.**—Same as Pennyroyal.
- Savin, Oil of.**—Same as Pennyroyal.
- Santonin.**—Evacuate stomach, use stimulants and emetics.
- Strophanthus and Its preparations.**—Give zinc sulfate and mustard as emetics. Also tannic acid. Stimulants (brandy or whisky). Epsom salt.
- Strychnine.**—Emetic of mustard followed by large draughts of warm water. Give powdered charcoal. To relieve spasms let patient inhale pure chloroform or give chloral hydrate (25 grains).
- Sugar of Lead.**—Give epsom salt (one-half ounce) dissolved in a tumblerful of water, emetic of mustard, large draughts of warm water, milk, demulcent drinks of flaxseed or slippery elm.
- Tansy.**—Same as Pennyroyal.
- Tartar Emetic.**—Give emetic of mustard or zinc sulfate. Milk, white of egg freely mixed with water.
- Veratrum, Viride and Its preparations and derivatives.**—Emetic of mustard followed by large draughts of warm water. Then strong tea or coffee, stimulants (whisky, etc.) freely. Keep patient in horizontal position, apply warmth to the extremities, artificial respiration.
- White Precipitate.**—Same as Corrosive Sublimate.
- Wood Alcohol.**—Give warm water and salt (two tablespoonfuls to a tumblerful) immediately. Repeat at short intervals. Stimulate the respiratory movement, and give strong coffee.

Zinc Sulfate.—Give white of egg, flour mixed with water, baking or washing soda, emetic of mustard. Give strong tea or coffee, stimulants (whisky, etc.). If needed, demulcent drinks.

AQUARIUM CEMENT.

See under Cements.

AQUARIUM WATER, To Make.

See under Sea Salt, Artificial.

ARSENIC PASTE, DENTISTS'.

See Dentists' Arsenic Paste.

AXLE GREASES (Lubricants.)

I.

Plumbago, very fine powderav.oz. 4
Lardav.oz. 12
Mix well.

II.

Plumbago, very fine powderav.oz. 6
Petrolatumav.oz. 10
Mix well.

III.

Petroleumgal. 1
Tallowav.oz. 4
Palm oilav.oz. 4
Plumbagoav.oz. 6
Caustic sodaav.oz. 1

These are mixed and heated together for an hour or more to a temperature of 80° C., cooled, and then stirred well together after 24 hours.

IV. Heat together 10 pounds of rosin oil and 8 pounds of lime, slaked and afterwards sifted fine. Stir the mixture constantly while heating, and continue the heating until the mixture is uniform and of the consistency of syrup. The resulting mixture is called rosin soap. Take 1 pound of this and 1 pound of palm oil, melt together, then stir in 50 pounds of rosin oil, and sufficient rosin soap to make the mixture of the consistency of butter. Lastly, add $\frac{3}{4}$ pound of caustic soda, heat and stir until thoroughly combined.

AXLE GREASE STAINS, Removal of.

See Stains from Fabrics, Removal of.

BAITS FOR ANIMALS.

See Scents for Attracting Animals.

BALL BLUING.

See Bluing, Ball.

BALLROOM FLOOR POWDER.

See Floor Wax in Powder.

BANANA OIL OR LIQUID.

This preparation used by painters and others for gilding purposes, also as a solvent in making varnishes, is stated to be composed of 9 parts each of amyl acetate and butyric ether and 1 part of alcohol.

By another authority it is said to be made as follows:

Transparent celluloidav.oz. 1
Acetone, enough to dissolve.
Amyl acetate, to make.....fl.oz. 20

Dissolve the celluloid by agitation. It should be cut into small pieces, if possible, to hasten solution.

BAROMETER GLASS, SOLUTION FOR.

(Chemical Barometer—Baroscope Liquid.)

There is a form of "barometer" which is quite common, usually being mounted in a frame with a thermometer, which is variously known as a storm glass, chemical barometer, domestic barometer, weather barometer, and by other catchy but inappropriate titles. The solution in the tube is usually of about the following composition:

Ammonium chloridgr. 30
Potassium nitrategr. 30
Camphorgr. 30
Alcoholfl.dr. 8
Distilled waterfl.dr. 9

Dissolve the camphor in the alcohol by agitation, the other solids in the water, add this solution (warm) to the camphor solution.

This solution is always contained in a sealed glass tube which is about three-fourths filled. As the weather becomes cooler, a portion of the camphor separates from the liquid in different crystalline forms which sometimes go to the bottom of the glass and sometimes remain partially suspended in the liquid. These changes in the appearance of the liquid are ascribed by the makers of the storm glass to variations in pressure of the atmosphere, the "glass" therefore acting as a weather forecaster. How-

ever, as indicated above the changes are due to temperature only and storm glasses are therefore entirely valueless for forecasting purposes.

BAROMETER OR HYGROMETER PAPER.

Barometer papers differ from the previously mentioned storm glasses in that they actually indicate, though in a crude way, the proportion of moisture in the atmosphere and in this way foretell the possibility of early showers or of continued dry weather. The basic substance of these papers is a soluble salt of cobalt, the chlorid or nitrate, which has the property of changing in color from blue in dry weather to pink in moist weather.

The following solution is a satisfactory one for making these papers:

Cobalt chlorid	av.oz. 2
Sodium chlorid	av.oz. 1
Acacia	av.oz. ½
Calcium chlorid	dr. 1½ to 3
Water	fl.oz. 6

Mix, dissolve and filter. In very dry regions, a larger amount of calcium chlorid must be employed than in moist regions. Glycerin may be substituted for the calcium chlorid, but the latter is to be preferred as the former is gradually dissipated.

To prepare the paper, soak white blotting paper in this liquid and then dry.

The amount of moisture in the air is indicated by the following colors:

Rose red	rain
Pale red	very moist
Bluish red	moist
Lavender blue	nearly dry
Blue	very dry

BARRELS IMPERVIOUS, To Make.

The following composition was patented in 1871: 50 pounds of glue, 16 pounds of plaster of Paris, 10 ounces of alum, and ¾ ounce of potassium iodid. Boil the mixture with sufficient water to give the required thickness. The mixture is to be applied hot and may be put on as thickly or thinly as desired.

BATTERY FLUIDS.

For bichromate batteries use Nos. I, II, III or IV.

I.

Mercury bisulfate	dr. 2
Potassium bichromate	av.oz. 2½
Sulfuric acid, crude	fl.oz. 3
Water	fl.oz. 16

In the water dissolve first the mercury salt and then the bichromate; then add the sulfuric acid very carefully, stirring constantly with a glass rod. When cool the solution is ready for use. The mercury keeps the zincs well amalgamated.

Sometimes the mercury salt is omitted, and frequently sodium bichromate is substituted for the potassium bichromate.

II.

Sodium bichromate	av.oz. 2
Sulfuric acid, commercial	fl.oz. 2
Water	fl.oz. 16

Pour the acid upon the bichromate, coarsely powdered, stir the mixture occasionally during an hour, then slowly add the water with stirring.

According to the National Formulary, this solution is intended for ordinary use. Sodium bichromate is more soluble than the potassium salt and its products of decomposition, in the battery are also more soluble. As it is much cheaper, it is now preferred in large electric laboratories. When it cannot be obtained, the potassium salt may be substituted for it, weight for weight.

III.

Sodium bichromate	av.oz. 2¼
Sulfuric acid, crude	fl.oz. 5
Water	fl.oz. 16

Prepare like No. II. According to the National Formulary, this is intended for use with a galvano-cautery.

BATTERY, STORAGE.

A very satisfactory storage battery may be constructed in the following manner: After procuring two half-round porous cups and a glass jar sufficiently large to hold them both, get two

pieces of sheet lead one-sixteenth of an inch thick, wide enough to fit the half-round side of the porous cups, and deep enough to come an inch above the top edge of the cups and jar. Solder a screw post to each lead plate, nearly fill the cup with a paste consisting of red lead and a solution of sodium sulfate thin enough to run like a cement, and put the lead plates in place, one of them being marked with an +. Fill the outer jar to within half an inch from the top with a 1:8 solution of sulfuric acid, and the battery is ready for charging. This may be done by attaching for 24 hours to a 12-cell copper sulfate battery, or to a dynamo; but always charge in the same direction. If well charged these storage cells will retain a large volume of electricity for a considerable time, and with a battery consisting of two or more cells small motors, lamps and induction coils may be operated. After the first charge a 5-cell battery suffices to recharge.

BATTERIES, Filling for Dry.

In the so-called dry batteries the exciting substance is a paste instead of a fluid; moisture is necessary to cause the reaction. These pastes are generally secret preparations. One of the earlier "dry" batteries consisted of a containing vessel of zinc, which forms the positive element; the negative one is a cylinder of carbon; and the space between is filled with a paste, the recipe for which is:

Zinc oxid	part 1
Ammonium chlorid	part 1
Zinc chlorid	part 1
Plaster of paris.....	parts 3
Water	parts 2

The usual form of silver chlorid battery is said to consist of a sealed cell containing a zinc electrode, the two being generally separated by some form of porous septum. Around the platinum or silver electrode is cast a quantity of silver chlorid. This is melted and generally poured into molds surrounding the metallic electrode. The exciting

fluid is either a solution of ammonium chlorid, sodium or potassium hydroxid, or zinc sulfate. As ordinarily constructed, these cells contain a paste of the electrolyte, and are sealed hermetically in glass or hard rubber receptacles.

Another "dry cell" is the following: In a containing vessel, generally of cardboard, is placed a zinc cylinder, and in the middle of this stands a carbon plate. The space between the zinc and carbon is filled with a jelly-like composition as mentioned. The zinc is coated on the inner surface to the thickness of $\frac{1}{4}$ inch with a paste made as follows:

Plaster of paris.....	av.oz. 1
Sal ammoniac	dr. 3
Water	av.oz. 2

The carbon is then put in, care being taken that it does not touch the zinc, and the remaining space is filled in with the following mixture:

Carbon, powdered (or graphite)	av.oz. 3
Black oxid of manganese, coarsely powdered	dr. 3
Zinc sulfate	dr. 1½
Sal ammoniac	dr. 5
Glycerin	gr. 40

Water, sufficient to make a stiff paste.

The cell is afterwards sealed up with melted pitch, ventholes being provided by inserting two pieces of thick wire, and removing them when the pitch is cold. There are many different makes of dry battery, but the compositions used probably do not differ to any great extent from that just given.

If to be used for producing electric light it may be said that such cells, no matter what size, have each an E. M. F. of about $1\frac{1}{2}$ volt; but taking into account their internal resistance (unless very large), one would not be far out in reckoning the available pressure of each cell as 1 volt, so that to light a 5-volt lamp well one would require 5 cells, and so on. Two or more similar lamps would be arranged in parallel, and would not require any more cells than one lamp; but the cells should be larger in proportion to the number of lamps.

In fact, the larger the cells the greater the current that may be taken, and the longer will the current last; but, in any case, such cells are only adapted for lighting lamps for a short time (a few minutes) at comparatively long intervals.

BAUME'S SCALE.

To convert Baume's degrees to specific gravity, the following may be employed:

I.

For liquids lighter than water, add the degree Baume to 130 and divide the sum into 140, viz.: $45^{\circ} = 140 \div (130 + 45) = 140 \div 175 = 0.80$ sp. gr.

II.

For liquids heavier than water, subtract the degree Baume from 145 and divide into 145, viz.: $29^{\circ} B = 145 \div (145 - 29) = 145 \div 116 = 1.25$ sp. gr.

BEDBUG EXTERMINATORS.

The number of "cures" for bedbugs is legion. The following list embraces some of the substances employed for their destruction: Oil of turpentine, kerosene, benzin, mercuric chlorid, mercury, Paris green, zinc chlorid, arsenic, insect powder, Scotch snuff, capsicum, naphthalin, camphor, sulfur fumes, ammonia vapor, hydrocyanic acid vapor, soft soap, carbolic acid (both pure and crude), colocynth, wormwood, aloes, pepper, sodium borosalicylate, cimicifuga root; also fresh sprays of strongly-scented plants, such as ledum palustre, pennyroyal, tansy, pine, etc., placed beneath the mattress.

Bedbug exterminators may be in the powder, the liquid or the paste form. The powder may be the well known insect powder, or it may be Paris green, or it may be a mixture of different insecticides. Sometimes these powders are made into a paste by moistening and are pressed into cracks containing, or suspected of containing, bedbugs or their eggs.

If the powders are used in the dry form, they may be introduced into the

crevices by means of an insect powder blower or "gun."

The liquid exterminators may consist of poisonous solutions like those containing corrosive sublimate or carbolic acid, or they may consist of oil of turpentine, kerosene, benzin, oil of cedar, etc., or they may consist of tinctures of bitter substances like colocyntn or quassia, or they may consist of resinous solutions, or they may consist of soapy solutions, or again they may consist of several of these classes of substances in combination.

Substances like kerosene, benzin, volatile oils, etc., act by dissolving the chitinous coating of insects and thus obstructing the breathing pores and cause death. The resinous substances act largely by cementing over the eggs and thus prevent their hatching. The bitter substances mentioned are usually destructive to insect life.

The objections to these different substances for exterminative purposes are that resins, oil of turpentine, etc., leave stains, benzin, kerosene, etc., are inflammable, corrosive sublimate, Paris green, etc., are excessively poisonous, carbolic acid has an unpleasant odor, etc. The evils of the different substances are often mitigated by combining several of them.

Liquid exterminators may be applied by means of a brush or feather, but a better method is to employ a machinist's oil-can or a bottle containing a perforated cork in which is inserted a quill. Corks which are perforated and are provided with a tin spout are now also to be had.

I. One of the most commonly-used bedbug exterminators is the following:

Corrosive sublimateav.oz.	1
Alcoholfl.oz.	32

Or some of the alcohol may be replaced by water. However, inasmuch as it is the alcohol and not the mercury chlorid that is presumed to be the insecticide, this replacement is not to be recommended. Very frequently a por-

tion of the alcohol, from about 20 to 80%, is replaced by oil of turpentine; this reacts with the corrosive sublimate, precipitating the latter. Oil of turpentine alone is an excellent bedbug destroyer. The alcohol may also be replaced by wood alcohol or denatured alcohol.

A good mixture is the one following this (No. II).

II.

Corrosive sublimate	av.oz.	1
Wood alcohol	fl.oz.	24
Oil of turpentine.....	fl.oz.	8
Oil of cedar.....	fl.oz.	1

Dissolve the corrosive sublimate in the alcohol and add the oils.

III.

Corrosive sublimate	dr.	2½
Ammonium chlorid	dr.	5
Decoction of quassia (about 1 in 20).....	fl.oz.	32
Mix and dissolve.—H.		

IV.

Common soap	av.oz.	1
Ammonium chlorid	av.oz.	1
Corrosive sublimate	av.oz.	1
Water, to make.....	fl.oz.	32

Dissolve the two salts in a portion of the water, the soap in the remainder of the water and mix the two liquids. Green or soft soap may be used if desired. A portion of the water may be replaced by oil of turpentine or kerosene or it may be entirely replaced by decoction of quassia or of white hellebore. Paris green or London purple may be added to the mixture if desired.

V.

Naphthalin	av.oz.	1
Gasoline	fl.oz.	16

Mix and dissolve. This is efficacious, is dangerous to use on account of the inflammability of the gasoline. This mixture may be used indiscriminately on bedding, furniture, textiles of all descriptions, wall-paper, etc. It may be improved by adding one ounce or so of resin or paraffin wax, which acts by forming a coating over the eggs of the insects and preventing their hatching out.

BENGAL LIGHTS.

These are the same as "colored fires." See Fires, Colored.

BENZIN JELLY (Gelatinized Benzin.)

This is benzin made into the form of a soft jelly by combination with soap or soap bark decoction or tincture. The soap, ammonia water, ether, and similar ingredients in the mixture add to the detergent properties of the benzin. The jelly is useful for cleaning gloves, ribbons, and fabrics generally, for removing greasy, oily, resinous, and other kinds of stains.

The directions for use are to rub the spot or stain with a sponge or suitable cloth saturated with the jelly, allowing to remain for a few minutes, then rinsing in warm water. If the stain is not removed, repeat the operation.

Those who intend using this kind of a preparation should be warned against the inflammability of benzin or any mixture containing any considerable proportion of it. The cleanser should preferably not be used at night nor in proximity to lights or fires.

Other cleaning preparations are mentioned under the headings Carpet Cleaners; Cleansing Preparations; Ammonia, Household; Soap, Ox-Gall.

I.

Hard soap, white.....	av.oz.	3
Water, boiling	fl.oz.	5
Stronger ammonia water...	fl.dr.	6
Benzin	fl.oz.	26

Dissolve the soap in the water, and when nearly cold add the ammonia and the benzin, and then perfume to suit.

Soaps with an excess of alkali give the best results.

II.

Castile soap	av.oz.	4
Stronger ammonia water...	fl.oz.	1
Benzin	fl.oz.	8
Water, to make.....	fl.oz.	32

Dissolve the soap in a portion of the water by the aid of heat, add the ammonia water and enough water to make 24 fluidounces, and then shake with the benzin.

III.

Castile soap	av.oz. 2
Benzin	fl.oz. 6
Stronger ammonia water...	fl.oz. 6
Water, to make.....	fl.oz. 20

Shave the soap into very fine pieces, and heat it on a water bath with 8 fluidounces of water until soft and jelly-like, then adding water to make 8 fluidounces. Mix well, strain through cheesecloth into a wide-mouthed bottle, add the benzin, shake well, then add the ammonia water gradually with constant agitation.

IV.

Castile soap, white.....	dr. 1
Alcohol	fl.dr. 4
Glycerin	fl.oz. 1
Ammonia water	fl.oz. 1
Ether	fl.oz. 1
Water, to make.....	fl.oz. 16
Benzin	sufficient.

Dissolve the soap in a portion of the water, then add the remaining ingredients. Into a wide-mouthed bottle of 16-ounce capacity put $1\frac{1}{2}$ ounces of this liquid and to it add benzin, little by little, shaking thoroughly after each addition, until no more will be taken up and a creamy mixture results.

V.

Cocanut oil soap.....	av.oz. 2
Ammonia water	fl.oz. 3
Solution of potassa.....	fl.oz. $1\frac{1}{2}$
Water, to make.....	fl.oz. 12

Dissolve the soap with the aid of heat in 4 fluidounces of water, add the ammonia and potassa and the remainder of the water.

If the benzin is added in small portions, and thoroughly agitated, $2\frac{1}{2}$ fluidounces of the above will be found sufficient to solidify 32 fluidounces of benzin.

VI.

Stearin soap	av.oz. 4
Cocanut soap	av.oz. $2\frac{3}{4}$
Ammonia water	fl.oz. 2
Water, distilled	fl.oz. 24
Benzin	fl.oz. 9

Shave the two soaps into fine pieces and dissolve them on a water-bath in the water. To the solution add the am-

monia water and then the benzin, stirring vigorously and frequently during cooling to insure a uniform creamy mixture.—D.

VII.

A co-called "benzin paste", for the removal of stains both from the hands and clothing may be made as follows: Melt 100 parts of stearic acid at 30 to 50° C., and add to it 40 parts of 15.6% of caustic potash solution, stirring well; then add to the semi-solid mass at the above temperature, 8 to 10 parts of strong ammonia water; mix well, and stir in 40 parts of melted tallow. Finally add benzin enough to convert the whole into a nice, smooth paste.

VIII. A preparation of an agreeable odor and of equal value as a cleansing agent may be made according to any of the preceding formulas by substituting pure or purified benzole for benzin.

BENZINE, Purifying of.

Benzine, as well as other petroleum distillates, may be purified by the process of the U. S. P. which is given in Part I. The following is another process: Add to the benzine 1 or 2% of oleic acid, which dissolves, and then $\frac{1}{4}$ % of aqueous solution of tannin which incorporate by thorough agitation. A quantity of solution of caustic potash or milk of lime sufficient to combine with the acids is then well shaken with the mixture and the whole allowed to stand. The benzine rises to the top of the aqueous liquid, sufficiently deodorized for all practical purposes.

BENZINE, Disguising Odor Of.

The following process has been patented in Germany for disguising the odor of benzine and other petroleum distillates: Add to the liquid a volatile oil containing a terpen such as oil of turpentine, fennel, caraway, lavender, pine needles, eucalyptus, etc., and then an alkali. If the benzine be mixed with 1% of oil of fennel, warmed to 70° C., then agitated with $2\frac{1}{2}$ % of solution of soda, sp. gr. about 1.30, and

allowed to stand till the benzine separates from the aqueous liquid, the former will have merely an odor of fennel.

BENZINE, Non-Inflammable.

So-called non-inflammable benzine is a mixture of tetrachlorid of carbon with benzine. A mixture of 7 parts of the tetrachlorid with 3 of benzine have been advised, but even this is considered inflammable by some so that a still larger proportion of carbon tetrachlorid is advised.

BICYCLE CHAIN LUBRICANT.

The best lubricant for bicycle chains is plain dry powdered graphite, or plumbago. This is brushed over the chain previously cleaned by immersion in kerosene, rubbing with a rag, another bath in the kerosene, followed by one in lard or sperm oil, and then rubbed thoroughly dry. The surplus plumbago thereupon is also removed by gently wiping the chain with a rag. In order to apply the plumbago more easily, some riders are in the habit of making it into a stiff paste with oil or grease, while others mix it with kerosene or oil of turpentine. Mixtures with glycerin also are recommended. Some like a composition of 2 to 3 parts of the powder with 5 parts of petrolatum. However, there is a great demand for stick lubricants. These are made by incorporating a sufficient amount of plumbago with a hard fat, such as tallow or tallow with a little wool-fat.

The white lubricants are crude soaps, of which the following is an example:

Tallow	part 1
Palm oil, crude.....	parts 2
Solution of sodium carbonate, 15%	part 1

Melt together and pour the mass into tin canisters.

BICYCLE ENAMEL.

This enamel is waterproof and wears well; it imitates closely the natural blue of steel, and it can be removed with a cloth soaked in alcohol at any time. It will keep indefinitely when tightly cork-

ed, and may be used on any metal as it will not corrode it.

Bleached shellac	parts 5
Borax	part 1
Alcohol	parts 5
Water	parts 4
Methylene blue	sufficient

Dissolve the borax in the water and the shellac in the alcohol by maceration, reserving a small portion of the latter to dissolve the methylene blue. Heat the watery solution to boiling and add the alcoholic solution, stirring constantly; strain out any lumps and add the blue solution.

Paint with a soft brush on the spokes, which have been cleaned bright with emery cloth. The quantity of blue needed is very small; by grading the amount employed any shade from a dark blue to a light steel color may be obtained.

Orange shellac can be used, but it gives a greenish cast to the enamel.

BICYCLE OIL, Illuminating.

Various mixtures are used, such as equal parts of kerosene and lard oil, or equal parts of kerosene and comphorated oil; or equal parts of sperm oil, lard oil, and kerosene.

Kerosene and sperm oil are also used. Formulas with camphor are frequently recommended, such as the following:

Gum camphor	part 1
Sperm oil	parts 8
Paraffin oil	parts 24

BICYCLE OIL, Lubricating.

Various combinations are recommended, such as a mixture of equal parts of kerosene and castor oil or 1 part of kerosene and 2 parts of sperm oil. Ordinary yellow paraffin oil may be used as a lubricant.

Another good combination is a mixture of

Camphorated oil	part 1
Sperm oil	parts 3
Paraffin oil	parts 4

This mixture is equally useful for lubricating and illuminating purposes.

The following has been patented in Germany: Olein, parts 12, rosin, parts

4, petrolatum oil, parts 10, castor oil, part 1; mix by melting, stirring till solidified. It is to be applied cold to the axle. The motion of the wheel insures its even distribution.

BICYCLE PAINT (Glossy Black.)

Amber	av.oz. 16
Linseed oil, boiling.....	fl.oz. 8
Asphaltum	av.oz. 3
Resin	av.oz. 3
Oil of turpentine.....	fl.oz. 16

Melt the amber in the boiling oil and add the asphaltum and resin. Mix thoroughly, remove to the open air, and gradually add the turpentine oil.

This is useful for metallic surfaces, such as on bicycles.

See also the similar "black varnish" under Varnishes.

BICYCLE TIRE CEMENT.

See under Cements.

BIRD LIME, Artificial.

Artificial bird lime is said to be made by boiling linseed oil and then igniting it. Another good preparation is obtained by mixing a strong solution of cabinetmaker's glue in water with a concentrated solution of zinc chlorid. Other preparations for the same purpose are the following:

I.

Linseed oil	fl.oz. 3
Burgundy pitch	av.oz. 7

Melt the pitch and incorporate with the oil.

II.

Rosin	av.oz. 5
Burgundy pitch	av.oz. 2½
Rapeseed oil	fl.oz. 3½

Prepare like the preceding.

III.

Rosin	av.oz. 4
German turpentine	av.oz. 2
Rapeseed oil	fl.oz. 2
Honey	dr. 2

Prepare like No. I.

BLACK ENAMEL.

See Bicycle Paint.

BLACKBOARD SLATING OR PAINT.

In preparing these paints it is essential that the insoluble substances be reduced to very fine powder and that they be thoroughly incorporated in the mixture, and also that they be kept in a state of suspension, during the process of application, by constant agitation.

Of course, much depends upon the skill of the painter, for unless he prepares the surface of the board or wall well before putting on the paint, the latter cannot be expected to appear to the best advantage. Two coats are usually to be preferred to one, and uneven surfaces, after either coat has been applied should be rendered smooth by rubbing with sandpaper or emery cloth.

On account of the rapid-drying properties of these paints, they should be applied quickly with a broad, flat brush.

I.

Lampblack	av.oz. 1
Pumice stone, powder.....	av.oz. 4
Boiled linseed oil.....	fl.oz. 8
Oil of turpentine, to make..	fl.oz. 32
Mix well to make a smooth paste.	

II.

Shellac	av.oz. 4
Lampblack	av.oz. 1
Emery flour	av.oz. 1
Ultramarine blue	av.oz. 1
Alcohol	fl.oz. 32

Dissolve the shellac in the alcohol. Place the lampblack, emery and ultramarine blue on a cheese-cloth strainer, pour on part of the shellac solution, stirring constantly, and gradually adding the solution until all of the powders have passed through the strainer.

III. A preparation of this kind was patented in the United States in 1872. The proportions mentioned in the patent were as follows:

Shellac	av.oz. 6
Emery flour	av.oz. 4
Ivory black	av.oz. 2
Alcohol	fl.oz. 32

If the board is used exclusively for chalk, the emery flour may be reduced one-half.

IV. The following differs materially from any of the preceding:

Borax, powder	av.oz.	2
Lampblack	av.oz.	2
Orange shellac	av.oz.	8
Pumice stone, fine pulver- ized	av.oz.	5
Water	fl.oz.	32

Heat the water to boiling, in it dissolve the borax and add the shellac which under continued heating will dissolve. From time to time add water, if necessary, to make up for that lost by evaporation. Now add the pumice stone and the lampblack, first rubbing the latter up with a portion of the liquid to a smooth paste, and stir the whole until well mixed. Pass the mixture through a fine sieve to remove any possible lumps, and add more water to reduce to the proper consistency.

This liquid may be painted on wood, metal, pasteboard, or even a plastered wall, providing the surface is sufficiently smooth. It should be applied with a soft, flat brush.

BLACKING FOR SHOES.

See Shoe Blacking, Liquid and Shoe Blacking, Paste Form.

BLACKING FOR STOVES.

See Stove Polish or Blacking.

BLEACHING FEATHERS.

See Feathers, Bleaching of.

BLEACHING IVORY.

See Ivory, Bleaching of.

BLEACHED SPONGES.

I. The following is the process of the National Formulary for bleaching sponges:

Free the sponges to be bleached from sand and any other obvious impurities or damaged portions by beating, washing and trimming, then soak for about 15 minutes in a sufficient quantity of solution of potassium permanganate, containing one-half av. ounce to the quart, wringing the sponges out occasionally and replacing in the liquid. Then remove and wash with water, until the latter runs off colorless. Wring out the

water and then place the sponges into a solution of sodium hyposulfite, containing 2 av. ounces to the quart. Next add for every quart of the last named solution used, 2 fluidounces of hydrochloric acid mixed with 8 fluidounces of water. Macerate the sponges in this liquid for about 15 minutes, expressing frequently and replacing in the liquid. Then remove and express, and immerse for a short time in a 10% solution of sodium carbonate, again expressing. Finally, wash the sponges thoroughly with water and dry them.

In the case of large and dark-colored sponges it may be necessary to repeat this treatment to bleach them sufficiently.

If it is desired to keep the sponges soft, and to prevent them from shrinking when dry, they may be dipped, after being finally washed, into a mixture of 1 volume of glycerin and 5 volumes of water, after which they may be wrung out and allowed to dry.

II. Dissolve 1 dram of potassium permanganate in one-half gallon of water, introduce the sponges into this solution, allow to remain for 24 hours, then remove and express, and introduce into another consisting of 5 drams of sodium sulfite dissolved in one-half gallon of water. While the sponges are soaking in this solution, stir into it one fluid-ounce of crude muriatic acid. Express the sponges frequently, returning to the liquid until well bleached. Then express again and wash thoroughly in warm water. To make certain that every trace of acid has been removed from the sponges, the latter should be soaked in a solution of $2\frac{1}{2}$ drams of sodium thiosulfate (hyposulfite) in $\frac{1}{2}$ gallon of water. The use of alkalis for the latter purpose is not to be recommended, as these have a tendency to produce a brownish discoloration.

If the sponges are intended for surgical purposes, they should first be freed from sand by beating and shaking, after which they should be macerated for 24

hours in a 2% dilution of crude hydrochloric acid. After thorough expression and washing with warm water, they are ready for the permanganate treatment.

III. The sponges are first immersed for a few minutes in a mixture of 1 part muriatic acid and 20 parts of water to remove calcareous matter. Wash out all the acid and treat with a solution of 1 part potassium permanganate to 45 of water, allowing the sponges to remain in this until fully saturated. Transfer from this, without rinsing, to the following: Oxalic acid, 1 part, sulfuric acid, 1 part, water, 50 parts. Remove from this as soon as the permanganate is decomposed. The sponges are now bleached, but which will not remain so unless treated with a weak alkali. A solution of sodium bicarbonate, 1 to 20, is recommended.

IV. The bromin process appears to be preferred in Germany. According to this the sponges, first freed from calcareous portion by trimming with a sharp knife or shears, are immersed in a saturated solution of bromin in water (about 1 in 30), taking care that there is no undissolved bromin. Allow the sponges to soak for several hours when their own color as well as that of the liquid becomes decidedly lighter. If necessary, the sponges may be given a second or even a third bath in bromin water. A final dip in very dilute sulfuric acid improves the sponges. The latter should be well washed in water to remove all the bromin odor, after which they are to be dried.

BLEACHING OF LINSEED AND POPPY SEED OILS.

Mix 1 quart of the oil in a bottle with a solution of 5 drams of potassium permanganate in 1 pint of water, shake thoroughly, set aside for 24 hours in a warm place, and then add 1 av. ounce of sodium sulfite in coarse powder. Agitate the whole thoroughly until the latter is dissolved, and incorporate 10

fluidrams of crude hydrochloric acid. Shake frequently until the brown liquid has become quite light in color, and wash the oil with water containing a small amount of chalk until the washings are no longer acid. After separating all the water, the oil may be filtered through dried sodium sulfate.

BLEACHED SHELLAC.

Mix 1 av. pound of chlorinated lime with 5 gallons of water in a hardwood tub and to this add 5 pounds of orange shellac which has previously been reduced to coarse powder. After 24 hours stir in a mixture of 5 pints of water and 20 minims of sulfuric acid, and then 30 pints of boiling hot water. The bleached shellac, which rises to the surface, is to be removed from the liquid, kneaded with hot water till free of lime, chlorin and acid, and then formed into sticks.

BLUE PRINTING PAPER.

The mixture which is to be applied to the paper consists of 2 (sometimes 3) solutions which are to be mixed just prior to use.

I.

No. 1.

Potassium ferrocyanid ...av.oz. 1
Distilled waterfl.oz. 10

No. 2.

Citrate of iron and ammoniumav.oz. 3
Distilled waterfl.oz. 10
Gum arabic or dextrin.....dr. 2

Keep these solutions in separate, well-stoppered bottles in a dark place.

The function of the gum or dextrin is to keep the solution on the paper.

II.

No. 1.

Iron citrate, soluble.....av.oz. 1
Distilled water, to make...fl.oz. 4½

No. 2.

Potassium ferrocyanid ...av.oz. ¾
Distilled water, to make...fl.oz. 4½

No. 3.

Potassium bichromategr. 23
Distilled waterfl.oz. 4½

Mix Nos. 1 and 2, add No. 3; filter quickly, and use immediately. The iron

citrate should be in scales, free from powder, and should not have been exposed to light. The ferrocyanid must also be free from any adherent powder.

To coat the paper.—This must be done by gas light. Pour some of the solution into a saucer, dip a soft pad of absorbent lint into it and pass quickly across the paper; again dip the pad in solution and pass across the paper from where it was left off. When all the paper has been thus coated take an artist map varnish brush and remove the excess of liquid.

Keep these solutions in separate well-stoppered bottles, which exclude actinic light. In using, mix equal parts of Nos. 1 and 2.

In preparing the sensitized paper, take a solid, firm paper, free from impurities, and apply the solution to the surface of the paper with a soft sponge or a broad, soft brush, being careful not to have the sponge or brush charged too heavily with the solution, or else the paper will have a streaked appearance, which will show in the finished print. Go over the surface of the paper in two directions at right angles to each other so as to insure an even coating. The paper must be allowed to dry in the dark, and in a horizontal position.

III.

No. 1.

Iron and ammonium citrate...dr. 4
Distilled water, to make....fl.oz. 2

No. 2.

Potassium ferricyaniddr. 4
Distilled waterfl.oz. 2

For use, mix equal parts of the two solutions.

IV.

Potassium ferrocyaniddr. 5
Iron and ammonium citrate...dr. 7¾
Ammonia waterm. 30
Distilled waterfl.oz. 6

Dissolve the ferrocyanid in the water, add the ammonia, and then the iron and ammonium citrate, and stir until a clear solution is produced. This liquid is to be used at once.

V. The following is said to keep much better than the ordinary commercial makes:

Solution No. 1.

Gum arabicdr. 3
Ammonio-citrate of iron.....dr. 4½
Tartaric aciddr. 3
Ammonia waterfl.dr. 6
Distilled waterfl.oz. 4

Dissolve the solids in the water by agitation in a bottle or trituration in a mortar, then add the ammonia.

Solution No. 2.

Potassium ferrocyanidgr. 225
Distilled waterfl.oz. 2
For use, mix Nos. 1 and 2.

This solution, which must be kept in the dark, should be applied to the paper with a soft, broad brush by artificial light and then dried in the dark. It is exposed under a negative in the ordinary way till the half-tones show a dark violet color, and it is then placed face downwards on water for about 10 seconds and removed, and exposed to the air for a short time, thoroughly washed in water and then immersed in a bath of

Javelle waterfl.oz. 1
Waterfl.oz. 20

till it turns a deep blue.

VI. The following process is that of Capt. Abney and yields a photographic paper giving blue lines on a white ground:

Table saltgr. 140
Ferric chloridgr. 375
Tartaric acidgr. 152
Acaciaav.oz. 2½
Distilled waterfl.oz. 10

Dissolve the acacia in half the water, the other ingredients in the remainder of the water, and mix the two solutions.

The liquid is to be applied, as evenly as possible, with a brush to strongly-sized paper, in a subdued light. The paper should be dried rapidly to prevent the solution sinking into its pores.

In sunlight, one or two minutes is generally sufficient to develop an image, while in dull light as much as an hour may be necessary.

To develop the print it is floated immediately after leaving the printing frame upon a saturated solution of potassium ferrocyanid. None of the developing solution should be allowed to reach the back. The development is usually complete in less than a minute. The paper may be lifted off the solution when the face is wetted, the development proceeding with that which adheres to the print. A blue coloration of the background shows insufficient exposure, and pale-blue over exposure.

When the development is complete, the print is to be floated on clean water, and after 2 or 3 minutes, placed in a bath, made as follows: *

Sulfuric acid	f.l.dr.	2½
Hydrochloric acid	f.l.dr.	6½
Water	f.l.oz.	10

In about 10 minutes the acid will have removed all iron salts not turned into the blue compound. It is next thoroughly washed and dried. Blue spots may be removed by a 4% solution of caustic potash.

The back of the tracing must be placed in contact with the sensitive surface.

BLUING, BALL.

This is said to be made from a mixture of 1 part of borax, 1 part of gum arabic, 2 parts of carbolic acid; 16 parts of Prussian blue, and sufficient water to form a dough; form this into balls of any suitable size, and dry them.

BLUING OF COPPER.

See Copper, Bluing of.

BLUING OF GUN BARRELS.

For bluing of gun barrels in imitation of the blue color imparted by heat, the following process is offered:

Sodium hyposulfite	av.oz.	4
Lead acetate	av.oz.	1
Water	pints	2

Dissolve the salts each separately in one pint of water then mix the solutions, and apply the mixture hot to the gun barrel. The surface of the barrel should previously have been entirely freed from oil or grease by wiping the surface with solution of potassa. When

the color has developed, wipe the metal dry and polish with oil.

BLUING, LIQUID.

Prussian blue	av.lb.	1
Oxalic acid	av.oz.	4
Water	gall.	½

After solution is effected, dilute as much as desired.

Soluble blue or blue aniline may also be employed for making this preparation.

Another preparation which may be employed is a solution of 1 part of indigo-carmin in 10 parts of water.

"BOILER COMPOUNDS" for Preventing Incrustation.

A great many substances are recommended as useful in preventing the lime and magnesium salts of water from forming hard scales on the interior of steam boilers, and all act by preventing the agglutination of the particles, the salts remaining suspended in the water or being precipitated as soft mud. Sodium carbonate, or soda ash, ammonium chlorid, molasses, glucose, spent tan bark, slippery elm bark, lime, terra japonica, sodium fluorid, trisodium phosphate, etc., are other substances which are recommended for this purpose.

There are many secret or proprietary combinations for preventing incrustations on the market for which extraordinary claims are made, but generally these are useful for only one kind of water and are totally unfit for every other kind. Some compounds prevent incrustation but cause so much corrosion that more harm is done than if no "compound" were used. Each "boiler compound" should really be specially compounded to fit the water to be treated. Furthermore the proper amount of "compound" should always be used as too little does not prevent the formation of scales and too much may corrode the boiler or it may raise the temperature of the water too high, besides being that much of a waste.

Sodium fluorid is said to have no ad-

vantage over sodium carbonate and is much more costly. It precipitates lime and magnesium salts in a light, flocculent form.

Trisodium phosphate has been highly lauded as a "boiler compound"; it converts soluble lime and magnesium salts into insoluble phosphates which remain in suspension for a long time on account of their low specific gravity and then settle as a soft mud. On account of its alkaline nature, it neutralizes any acids present which may cause corrosion. An excess of it is not likely to cause foaming as in the case of sodium carbonate.

The use of sodium bichromate has been patented in Germany. It precipitates the lime and magnesium salts as insoluble, non-scaling chromates. It is said that an excess of this chemical or even of free chromic acid will cause no corrosion.

Tannin is used to some extent. It precipitates the lime and magnesium salts in a satisfactory form but it has a corrosive action on the iron. Sugar and saccharine substances are also used as these precipitate the salts in a flocculent form.

Such substances as sawdust, starch and potatoes act in a mechanical manner. Sawdust furnishes a nucleus or center for the salts as they crystallize to prevent them from uniting together. Starchy substances like potatoes act by forming a coating on the minute scales to prevent them from hardening. These substances have the disadvantage of causing foaming. A substance like tan bark acts both chemically and mechanically.

The following mixtures have been offered as "boiler compounds."

I.

Catechu	av.lb. 2
Sal soda, crystal.....	av.lb. 2
Dextrin	av.lb. 1
Potash, crude	av.oz. 8
Alum	av.oz. 8
Sugar	av.oz. 8
Gum arabic, common.....	av.oz. 8

II.

Turmeric	av.lb. 2
Sodium bicarbonate.....	av.lb. 2
Dextrin	av.lb. 1
Potash, crude.....	av.oz. 8
Alum	av.oz. 8
Molasses	av.oz. 8

The foregoing amounts are for a 5-horse power boiler, and for water rich in lime. The next is for river water, 100-horse power boiler, and must be renewed whenever the boiler is emptied:

III.

Sal soda, crystal.....	av.lb. 2
Dextrin	av.lb. 2
Alum	av.lb. 10
Sugar	av.lb. 10
Potash, crude.....	av.lb. 5

IV. A United States patent for a "boiler compound" mentions the following formula:

Black treacle.....	lb. 20
Wattle bark.....	lb. 10
Shreds or shavings of leather lb.	5
Licorice root.....	lb. 2
Caustic soda.....	lb. 15

Boil this mixture for 5 hours with sufficient water to make 40 gallons of liquid.

BOTTLE CAPPING OR SEALING MIXTURES.

These preparations are generally made either a gelatin or a resin basis and require to be heated before they are applied. They may be colored before use to improve their appearance. Gelatinous mixtures should be preferred for alcoholic liquids, while resinous liquids should be used for aqueous liquids.

Gelatinous Mixtures.

These are made with either gelatin or glue in combination with water and other ingredients, frequently containing glycerin. They may be tinted blue, red, purple, or other colors with water-soluble aniline dye.

Solution of carmine or tincture of cudbear may be used for coloring the mixture.

Mix the mixture before use by the application of a gentle heat. The cap

may be stamped while still soft with a slightly oiled die.

I.

Gelatin	av.oz. 1
Gum arabic.....	av.oz. 1
Starch	av.oz. 1
Boric acid.....	gr. 20
Water	fl.oz. 16

Mix the gelatin, gum and acid with 14 fluidounces of cold water, stir occasionally until the gum is dissolved, heat the mixture to boiling, remove the scum and strain. Also mix the starch intimately with the remainder of the water, and stir this mixture into the hot gelatin mixture until a uniform product results. The latter may be tinted with any suitable aniline dye.

II.

Gelatin	av.oz. 3
Glycerin	fl.oz. 2
Water	fl.oz. 9

Select a clear grade of gelatin, add the water, let stand till the gelatin is softened, liquefy by heating gently, and incorporate the glycerin. Color as may be desired as described above.

More glycerin may be added if a softer mixture is desired. Glue may be used for a portion of the gelatin which may be white or brown.

III. Put a weighed amount of dry glue or gelatin in water, and let it stand over night. In the morning drain and press off all the surplus water, and then dissolve the swollen mass by heating in a water bath. Add while still in the bath about one-half as much glycerin as there is liquefied gelatin, and for every av. pound of gelatin employed add 1 av. ounce of tannic acid, and stir until entirely homogeneous. Test the liquid on a piece of glass, and if when cold, it is too hard or brittle add somewhat more glycerin, and if too soft more glue and tannin, preserving the proportions indicated.

If desired to color the mixture any of the mineral colors (rose pink, ucmenian bole, chrome yellow, etc.) may be added to make an opaque mixture, or an ani-

line dye may be added to make a semi-transparent mixture.

Resinous Mixtures.

The regular sealing waxes may be employed for sealing bottles. See Sealing Wax. The following are somewhat different.

IV.

Venice turpentine.....	av.oz. 3
Shellac	av.oz. 5
Rosin	av.oz. 9

Melt together and color with lamp-black, ucmenian red, ucmenian bole, ultramarine blue, vermilion or otherwise.

V.

Rosin	av.oz. 4
Yellow wax.....	av.oz. 9

Melt together and color with lamp-black; ultramarine blue, vermilion, or other mineral color.

VI.

White wax	av.oz. 8
Bismuth subnitrate.....	av.oz. 1

Melt the wax at a gentle heat and stir in the bismuth subnitrate to form a smooth mixture.

This makes a nice white cap. The mixture should be kept constantly stirred. The application must be repeated several times until sufficiently thick.

BOTTLES, Cleaning Greasy.

The following preparation is an efficient solvent for grease in obstinately dirty bottles:

Castile soap, in shavings...	av.oz. 4
Sodium carbonate.....	av.oz. 2
Borax	av.oz. 1
Ammonia water.....	fl.oz. 7
Alcohol	fl.oz. 3
Sulfuric ether.....	fl.oz. 2
Soft water, to make.....	gal. 1

The soap should be boiled in the water until it is dissolved, and the other ingredients then added.

Oily and greasy bottles need hardly ever be thrown away if they are properly cleansed. The above mixture will suffice in most instances, although simpler or cheaper methods may first be tried. Volatile oils may be removed frequently by rinsing with wood alcohol. It is better to use this in several

small amounts rather in one larger quantity. If the bottle be an old one and the oil has become resinified, the bottle should be rinsed with strong sulfuric acid, then with clear water.

Bottles which have contained fixed oils may be cleansed by putting in some lye or salt of tartar, adding a small amount of water to make a concentrated solution, agitating thoroughly, then rinsing several times with clear water. Another method is to put sawdust into the bottle, then to add ammonia water several times, shaking out after each addition of ammonia, and finally rinsing with clear water. Another method of cleaning bottles which have contained fixed oil is to put in a little ground soap bark and shake up with water. If this is not effective use stronger agents such as lye or salt of tartar or the mixture mentioned above.

Another method of cleaning bottles that have contained various volatile oils is to put in some linseed meal, in about the proportion of one ounce to a 16-ounce bottle, allowing the meal to absorb as much oil as possible, then add a little water, shaking well. Fill the bottle with water, shake well, empty, rinse with clear water, and the bottle will be clear and free from odor. This method is said to clear out any oils which are not oxidized on the inside of the bottle.

BRASS PLATING.

See Plating with Gold, Silver, etc.

BRASS, POLISHES FOR.

See also Putz Pomades, Putz Tablets, Metal Polishes, Polishing Powders, and Polishing Cloths.

I.

Oxalic acid.....av.oz. 2
Pumice stone, powder.....av.oz. 4
Water, to make.....fl.oz. 16

Dissolve the acid in the water previous to adding the pumice.

Apply, after shaking, with a rag, and polish with a second dry woolen rag.

II. This method is said to be used

in the United States arsenals: Dip the article in a mixture of 2 parts of common nitric acid and 1 part of sulfuric acid, contained in a stone jar. The articles, after being dipped in this mixture, are thoroughly washed with water and then rubbed with dry sawdust. A solution of oxalic acid is used in the same way, smooth surfaces being rubbed with prepared chalk, or equal parts of the latter (or whiting) and oxalic acid, made into a paste with water, may be applied. A great many other processes are employed, such as rubbing with rotten stone and sweet oil, and then with whiting; this is particularly effective with copper articles.

III. The following was said to be used by the Prussian soldiery:

Sulfuric acid.....fl.oz. 1
Olive oilfl.oz. 16

Place the oil in an open vessel and add the acid gradually, with constant stirring.

IV.

Tripoliav.oz. 4
Prepared chalk.....av.oz. 4
Pumice stone, very fine
powderav.oz. 2
Oleic acid.....fl.oz. 1

Petrolatum, enough to make a soft paste.

V.

Tripoliav.oz. 2
Infusorial earth.....av.oz. 2
Japan waxav.oz. 1
Oleic acid.....fl.oz. 2
Gasolinefl.oz. 16

Dissolve the wax and acid in the gasoline, add the powders, and shake well.

The tripoli should be gritty enough to scrub well, but fine enough to leave a smooth, unscratched surface. In fact this is the most important ingredient, and any grit that is hard enough to polish well and fine enough to do it without scratching, can be used. Powdered quartz, fine pumice, rouge, fine emery, etc., can all or any of them be used, if carefully selected. The function of the infusorial earth is to aid in

suspending the grit, and to hinder the evaporation of the benzine, and the lightest and most bulky brands are best.

BRICK WALLS, Removing Efflorescence On.

The usual method of treatment for removal of the white efflorescence on brick walls is by painting with dilute muriatic acid.

BRONZE PAINTS.

The bronze colors as furnished in the pharmacy serve for temporary purposes; that is, they are expected, in addition to drying rapidly to be fairly permanent, but not so much importance is laid upon their resisting moisture and atmospheric influences.

Where these latter qualities are desired a copal shellac varnish is the best; though the use of any such varnish is objectionable because the fatty or resinous acids, either already present or liable to develop have a chemical action on the copper of the bronze and are apt to cause it to turn green or to deaden the luster of the bronze.

The commercial liquid bronzes consist for the most part of solutions of resins in turpentine oil and should be rejected on the grounds above indicated. Another variety is made of a mixture of gum dammar, rubber and benzin and this does not present the objectionable features above noted in so marked a degree, but has the disadvantage that owing to the very rapid evaporation of the benzin it is difficult to work with.

The following formulas avoid these objections. The liquid bronze is particularly useful for applying to wicker work, plaster figures, frames, leather, etc. With bronze powder no previous coating with varnish is necessary. The bronze paints are used most in the gold, silver and copper colors.

I. Liquid bronze:

Bronze powder.....	av.oz. 11
Borax-shellac solution.....	fl.oz. 5
Alcohol	fl.oz. 2

Rub the powder, adding the liquid very slowly; put in (bottles holding about 1 ounce with not too narrow mouths and label with the following directions:

Shake before using until the contents are thoroughly mixed. Then apply with a camel's hair pencil, shaking again each time before dipping the pencil in.

The borax-shellac solution is made by heating together on a water-bath at a temperature not over 60° C. a mixture of ½ av. ounce of powdered borax, 3 av. ounces of orange shellac, and 20 fluidounces of water, stirring frequently, until the shellac is dissolved.

II. Weather-proof bronzing powder:

Bronze powder.....	av.oz. 13
Dextrin	av.oz. 8
Potassium bichromate.....	gr. 10

Powder the bichromate very fine and mix thoroughly with the other powders.

III. Bronze powder, not weather proof:

Bronze powder.....	av.oz. 3
Dextrin	av.oz. 1

Dispense in paper parcels of about 150 grains each with the following directions:

Mix the contents of this package with 2 teaspoonfuls of water, set aside until no lumps are left, and then apply with a camel's hair brush.

IV. Bronze paint for cheaper work may be prepared by mixing chrome green, 2 av. pounds; ivory black, 1 av. ounce; chrome yellow, 1 av. ounce; japan, 4 av. ounces. Grind together and thin with linseed oil.

V. Another formula is as follows:

Prepare a size consisting of ben-zoin, 50 grains; shellac, 1 av. ounce; alcohol, 4 fluidounces. After dissolving by means of a gentle heat, set aside in a cool place for several days and decant the clear solution. To this size the bronze powder is added in sufficient quantity. This paint is applied with a soft brush to the clean metallic surface, a second coat being given if desirable. Apply varnish over all.

Sometimes the metal is first ground-
ed by painting an orange or scarlet
color.

VI. The following bronzing liquid
is quite different from any of the pre-
ceding:

Red aniline	av.oz. 1
Violet aniline	av.oz. 1
Benzoic acid	av.oz. 1
Alcohol	fl.oz. 18

Dissolve the anilines in the alcohol,
in a bottle, by the aid of a water bath,
add the acid, then boil the mixture
on the water bath for 5 or 10 minutes
until the greenish color of the liquid has
changed to a light brownish bronze.

This may be applied to leather, wood,
metal, and other surfaces.

Another formula mentions 2 ounces
of red aniline.

BRONZING OF GUN BARRELS.

The gun barrels are to be cleaned
thoroughly and polished after which
one of these solutions is to be applied
with a sponge:

I.

Copper sulfate.....	av.oz. 2½
Nitric acid.....	fl.oz. 2
Tincture of iron chlorid....	fl.oz. 3
Solution of antimony chlorid	fl.oz. 6
Distilled water.....	fl.oz. 5
Mix and dissolve.	

II.

Iron chlorid.....	av.oz. 2
Gallic acid.....	av.oz. 1
Solution of antimony chlorid	fl.oz. 1½
Distilled water.....	fl.oz. 4
Mix and dissolve.	

III.

Copper sulfate.....	av.oz. 2½
Nitric acid, commercial....	fl.oz. 2
Solution of antimony chlorid	fl.dr. 3
Solution of iron chlorid....	fl.dr. 6
Water	fl.oz. 5
Mix and dissolve.	

BROWNING OF, GUN BARRELS.

I. A.

Solution of iron chlorid...fl.oz.	1½
Corrosive sublimate.....dr.	3
Copper sulfate.....dr.	3
Fuming nitric acid.....fl.dr.	2

Distilled water.....fl.oz. 10
Mix and dissolve.

B.

Potassium sulfid.....gr. 50
Distilled water.....fl.oz. 10
Mix and dissolve.

Clean off the gun barrel with emery
paper, then by means of a sponge or
soft brush, apply solution A, subse-
quently drying in a cool place, so that
it may occur rather slowly. Repeat this
application and drying twice, or often-
er if necessary to secure the shade of
stain desired, rubbing over thoroughly
before each application with a scratch
brush. When the metal is stained
deeply enough, lay the barrel in solu-
tion B for 20 or 30 minutes, then wash
with warm water, and finally with soap
water. Then dry and rub over with
linseed oil varnish.

Better results will be attained by
stoppering closely the gun barrel at
both ends by means of corks, and lay-
ing for at least 30 minutes in each of
the baths, which have previously been
warmed.—D.

II. A.

Fuming nitric acid.....fl.dr. 2½
Distilled water fl.oz. 16 |

B.

Silver nitrate.....gr. 80
Distilled water.....fl.oz. 16

Rub off the gun barrel with emery
paper, then by means of a sponge or
soft brush apply solution A, dry in a
cool place, and rub off with a cloth.
Repeat this application, drying and rub-
bing off until a handsome oxidized sur-
face is produced. Then apply solution
B repeatedly, with subsequent exposure
to light, until the gun barrel is dark
enough, and anoint finally with linseed
oil varnish.—D.

III.

Copper sulfate.....av.oz. 1
Corrosive sublimate.....dr. 6
Sweet spirit of nitre.....fl.oz. 1
Distilled water.....fl.oz. 15

Rub up first the spirit of nitre with
the corrosive sublimate, then add the
other ingredients, let it stand in a well-

closed bottle in a warm place for 12 hours, and then add the water. Clean and polish the barrel with emery paper, wash it off with lime water, dry, and apply this mixture uniformly. Allow to dry for 24 hours, brush with a scratch brush and wash off. After repeating this three times polish the barrel with leather moistened with olive oil mixed with some oil of turpentine, dry for 12 hours, and finally polish with oil.

IV.

Solution antimony chlorid...fl.oz. 3
Butterav.oz. 4
Olive oil.....fl.dr. 1

Heat the mixture in a flask and then brush it uniformly over a barrel, previously cleansed and polished; hold the barrel over a moderate coal fire, when a beautiful brown will soon make its appearance; then polish with olive oil and finally give it a light coat of good amber lacquer mixed with some shellac.

V. The United States Ordnance Manual gives a process as follows: Alcohol, $1\frac{1}{2}$ ounces; sweet spirit of nitre, $1\frac{1}{2}$ ounces; copper sulfate, 1 ounce; nitric acid, $\frac{3}{4}$ ounce. Mix and dissolve in 1 quart of warm water and keep it in a glass jar. Clean the barrel well with a solution of caustic soda, to remove grease or oil. Then clean the surface of all stains or marks by emery paper or cloth, so as to produce an even, bright surface for the acid to act upon, and one without finger marks. Stop the bore and vent with wooden plugs. Then apply the mixture to every part with a sponge or rag and expose to the air for 24 hours, when the loose rust should be rubbed off with a steel scratch brush. Use the mixture and the scratch brush twice, and more if necessary, and finally wash in boiling water, dry quickly and wipe with linseed oil or varnish with shellac.

BUFFALO MOTHS, To Exterminate.

This insect which is generally spoken of as the "buffalo moth," "carpet beetle," and "carpet bug," is in reality not

a moth, but a beetle belonging to the order coleoptera, while true moths, such as the ordinary clothes moths, belong to the order lepidoptera.

Tobacco, pepper, camphor, carbolic acid and oil of turpentine have all been recommended for destroying or driving them off, but none of these remedies seem to be of much avail.

It is the larva of the insect that works the damage to woolens. When in this condition it is about $\frac{3}{16}$ inch long, and is covered by a shaggy coat of black hair, from which the term buffalo moth probably originated. It eventually develops into a beetle about an $\frac{1}{8}$ inch in length, and marked with black, scarlet and white.

Benzine, kerosene and good insect powder appear to be the most efficacious substances with which to combat this pest. Carpets which are infested may be soaked in gasoline which if of good quality will leave no odor or stain. When the carpets are taken up it is a good plan to pack all the cracks in the floor with cotton, which should then be saturated with gasoline. When the larvæ are found to be injuring furs or clothes hung in the closet, it would be best to use insect powder.

It is stated that the insects in carpets can be destroyed by laying a wet sheet on top of the carpet and passing hot flat-irons over it, the steam thus produced destroying the grub. In recommending the employment of gasoline the dangerously inflammable nature of the liquid should always be called to the attention of the user and the necessary precautions suggested. The late Dr. Riley of the Department of Agriculture recommended this treatment:

Bare as many rooms as possible at house-cleaning time, and, after carefully removing all dust, spray benzine by means of an atomizer into all of the floor cracks and under the baseboards until every crevice has been reached. The carpets, after thorough beating,

should be slightly sprayed in the same manner. Benzine quickly evaporates and leaves no odor.

Another method of extermination which has been recommended is fumigation with formaldehyde.

CALCIMINE, To Prepare.

See Kalsomine.

CARBOLIZED PAPER.

See Paper, Carbolized.

CARBON PAPER.

See Paper, Carbon or Manifold.

CARPET BEETLES, To Exterminate.

See Buffalo Moths.

CARPET CLEANERS.

Use any of the preparations mentioned under Cleansing Creams or Soap, Ox-Gall, or any of the below-mentioned preparations. About the most satisfactory carpet cleaners are those which are of a saponaceous character.

Liquids.

I. Bradford's mixture:

Ammonia water	fl.oz. 2
Soap solution	fl.oz. 4
Gasoline	fl.oz. 4
Chloroform	fl.dr. 5
Potassium nitrate	fl.dr. 2½
Oil of wintergreen.....	fl.dr. 2½
Water, to make.....	fl.oz. 32

Some kind of soft water must be used. Mix the ammonia and soap solution, add the gasoline, chloroform, and oil, and then the potassium nitrate dissolved in the water.

This makes a milky mixture which separates somewhat on standing but unites readily upon shaking.

The oil of wintergreen may be replaced by sassafras or other essential oil or it may be omitted altogether.

The soap solution may be made by mixing 1 fluidounce of olive (or other fixed oil like cottonseed oil) with 4 fluidrams of alcohol and 1½ drams of caustic potash dissolved in 4 fluidrams of water, heating on a water bath until the oil is entirely saponified, which may be shown by adding a drop to boiling

water when it should dissolve without any oily separation. Allow the mixture to cool, add 8 fluidounces of alcohol and enough water to make 16 fluidounces, and then filter. Ordinary wood alcohol or the purified kind may be used instead of alcohol.

II. This is called Clark's wash for carpets: Apply first a mixture of 4 parts of ammonia water and 3 of alcohol, which is said to loosen the dirt. Then go over the carpet with a mixture composed of

Soap	av.oz. 2
Water	fl.oz. 40
Sal soda	av.oz. 7
Ammonia water	fl.oz. 1
Alcohol	fl.oz. 1

This removes the dirt without requiring removal of the carpet from the floor.

Powder.

III.

Sal soda	av.oz. 8
Borax	av.oz. 4

Both should be in powder.

In using, this amount of material is to be dissolved in a gallon of water, then mix this with a solution of a pound of soap (any good washing soap) in 4 gallons of water. Apply this combination, preferably warm, to the carpet with a scrubbing brush, remove the lather with a wooden scraper, and dry the carpet with a flannel cloth.

Soap.

IV.

Sodium carbonate, powder.....	av.oz. 16
Fuller's earth	av.oz. 8
Oil of turpentine.....	fl.oz. 2

Soft soap, enough to make a paste.

This may be dispensed in small wooden boxes or tin cans.

It is used like No. III, first dissolving in a sufficiency of water.

CARRIAGE-TOP DRESSING.

These dressings are to be applied to the enameled tops of carriages.

I. Mix 1 av. ounce of India rubber, cut into shreds, with 8 fluidounces of oil of turpentine, macerate in a wide-mouthed bottle or suitable jar for 2 days without agitation, then stir with a

wooden paddle. Add another 8 fluid-ounces of oil of turpentine and stir frequently until solution is complete. Let stand for a day or two, then decant 12 ounces of the solution, and add 16 fluid-ounces of the best white copal varnish, and mix thoroughly. Finally add 12 fluidounces of boiled linseed oil, and heat the whole over a sand-bath, with frequent stirring, until homogeneous.

This is said to be the formula of the enameled leather dressing of Champagnat.

II.

Shellac	av.oz.	3
Rosin	av.oz.	1
Castile soap, shaved.....	av.oz.	½
Venice turpentine	av.oz.	2
Rosin oil	fl.dr.	2
Alcohol	fl.oz.	20
Nigrosin	dr.	3

Mix all the ingredients, except the nigrosin, heat them cautiously over a water bath until nearly all dissolved, then add the nigrosin, and continue the heat until it is dissolved.

CATERPILLAR LIME.

This composition is to be smeared on vines or plants to catch caterpillars and prevent them from doing further injury.

I.

Paraffin wax	gr.	75
Linseed oil	fl.oz.	5
Venice turpentine	av.oz.	6
Mix by melting.		

II.

Pine tar	av.oz.	9
Venice turpentine	av.oz.	1
Mix by melting.		

CEMENTS of All Kinds.

Some of these are frequently entitled "glues" and possibly some of the formulas to be found under Glues, Liquid, will serve the purpose of a cement.

AQUARIUM CEMENTS.

I. This preparation is very highly recommended:

Litharge	parts	3
Plaster of Paris.....	parts	3
White sand	parts	3
Rosin	part	1

The ingredients should be in fine pow-

der and should be made, when wanted for use, into a thick paste with boiled linseed oil to which a little drier has been added.

The cement cannot be used after it has been mixed for a few hours. It will serve for fresh water and marine aquaria equally well. It is best to let it harden a day or two before using the aquarium.

II. This formula, also an excellent one, is very similar to the preceding:

Whiting	parts	6
Plaster of Paris.....	parts	3
Fine white sand.....	parts	3
Litharge	parts	3
Rosin, powder	part	1

All parts are by measure. Mix the ingredients thoroughly, then make into a putty-like mass with the best coach varnish. Only enough for one glass should be made up at once, as the material hardens very quickly. In putting in the glass, first scrape away the embedding material first used, then put on a layer of this cement. As soon as the embedding is made, place the glass in, and with a firm, slow pressure push it in, leaving a layer of the cement about 1/16 inch deep underneath the edges. Fasten the glass to place with brads and immediately put on the outside, cementing exactly like putty. If the woodwork is new it is best to go around the edges of the glass and the wood next it with a light layer of coach varnish, applying the "putty" immediately thereafter. Let the apparatus stand for 5 or 6 days to harden, then cover the putty outside and inside with two coats of asphalt varnish, carrying the varnish well over on the glass.

III.

Plaster of Paris.....	parts	2
Marble dust	parts	2
Litharge	parts	2
Rosin, powder	part	1

All parts are by measure. Mix the powders and make into a putty, just before using, with boiled linseed oil. The details of using are the same as with No. II.

Bicycle Tire Cement.

See also Puncture Cement.

IV.

Gutta perchaav.oz. $\frac{1}{2}$
 Caoutchoucav.oz. 1
 Carbon disulfidfl.oz. 8
 Mix and dissolve.

This cement is dropped into the crevices after they have been properly cleaned. If the rent is very big apply the cement in layers. Bind up the rubber tire lightly with thread, let dry for 24 to 36 hours, cut off the thread and remove the protruding cement with a sharp knife, which must previously have been dipped in water.

V.

Caoutchoucav.oz. $6\frac{1}{2}$
 Resinav.oz. 1
 Shellacav.oz. $\frac{3}{4}$
 Carbon disulfid, enough to dissolve the other ingredients.

Use like No. IV.

Casein Cement.

Casein when made into a cement makes a good adhesive for uniting paper, cloth, leather, crockery, etc. There are various methods for making such a cement. Freshly precipitated, washed and drained casein is meant in each instance.

VI.

Boraxpart 1
 Waterparts 19
 Caseinsufficient

Dissolve the borax in the water and add enough fresh casein to make a preparation of about the consistence of honey, stirring vigorously to effect solution.—D.

VII. This is better adapted for mending crockery, glassware, porcelain, etc.

Casein, fresh, any desired quantity.

Solution of sodium silicate, sufficient.

Triturate the casein in a mortar with enough of the solution to make a honey-like mixture.

This will keep for some time in well-closed wide-mouthed bottles.

It is a transparent cement but does not resist the action of water.—D.

Cement for Crockery, Porcelain, Glassware, Etc.

Any number of formulas under the general heading of Cements are adapted to the purpose of mending crockery, porcelain, glassware and similar substances, such as some of the Casein Cements, Chromium Cement, Diamond Cement, and others. Here are some others.

An almost invisible joint may be made, with careful handling, with the following:

VIII.

India-rubberparts 5
 Masticparts 3
 Chloroformparts 12

Cut the rubber into shreds, put into a suitable vial, and pour on the chloroform. Stopper tightly, and set aside until the rubber is dissolved, then add the mastic, and let stand until it is dissolved. Apply the cement to each surface to be united, and let the pieces stand until the greater part of the chloroform is evaporated, then unite, press firmly to place, and if possible tie in position. When the cement is apparently thoroughly dry on the surface, scrape off the superfluity, and dust over the line of junction a little zinc oxid, chalk, or some such material, and with a clean pencil brush it over the joint. After the cement has become perfectly dry, remove the cords and rub off the superfluous powder.

Cement for Celluloid.

IX. It is stated that if the edges of pieces of celluloid be moistened with glacial acetic acid, they may be fastened together. The parts should be held together with pieces of twine until thoroughly dried.

Dental Cements.

There are so many of these cements that they are merely referred to here.

X. Sorel's cement for filling cavities in teeth is made by adding rapidly, deliquescent zinc chlorid to enough zinc oxid to make a thick paste, and applying it immediately.

Zinc phosphate cement is made by

mixing zinc oxid with syrupy phosphoric acid.

Diamond or Armenian Cement.

XI. This preparation is an old-fashioned but exceedingly good article which is almost a universal cement, as it will stick together the most diverse articles. The formulas differ somewhat from each other.

Isinglass (fish glue).....av.oz.	1
Gum mastic	dr. 4
Gum ammoniac or galbanum.....dr.	2
Alcohol	fl.oz. 8
Water	fl.oz. 8

Soak the isinglass in the water for 24 hours, evaporate on a water bath to 4 fluidounces, add 4 fluidounces of alcohol, strain, add the mastic dissolved in the remaining alcohol, and add the ammonia or galbanum by trituration, avoiding loss of alcohol as much as possible.

This cement must be warmed gently in a water-bath before use.

XII. A slight modification, which is an improvement, is this:

Isinglass (fish glue).....av.oz.	1
Gum ammoniac	gr. 36
Gum mastic	gr. 18
Alcohol, 95%	fl.dr. 1½

Water, sufficient.

Soak the isinglass in cold water for a few hours or over night, until it has swollen and become soft throughout. Then pour off the superfluous water and drain the magma on a towel. Upon the thoroughness of this will depend in a great measure the strength of the cement. Then transfer the gelatin to a water-bath and heat until it becomes fluid. Dissolve the gums in the alcohol and add the solution to the gelatin liquid after the latter has been allowed to cool to about 160° F., stir the whole well or mix by agitation.

Cement for Gas Burners.

XIII. Litharge, glycerin, each sufficient to make a stiff paste.

For Cementing Glassware.

Use any of the preparations mentioned under "cements for crockery, etc.,"

"chromium cement," or "diamond cement."

The liquid glues are also suitable for mending glassware which does not come in contact with liquids. See Glues, Liquid.

For Cementing Glass Labels to Bottles.

XV.

Rosin	part 1
Yellow wax	parts 2

Melt together, allow to cool somewhat, but apply in the melted condition.

In using, apply a plentiful amount of the composition, draw a line around the edges of the label, and when the mixture has hardened the excess which has exuded around the label may be scraped off.

XVI. A thick mixture of white lead and varnish is also good for this purpose. The cement requires longer to dry than No. XV.

Gutta Percha Cement.

XVII.

Gutta percha, in pieces.....av.oz.	2
Asphalt, powder	av.oz. 2
Carbon disulfid	fl.oz. 4
Oil of turpentine.....fl.oz.	1

Dissolve the gutta percha in the carbon disulfid and oil, add the asphalt and let stand for several days, when it will be ready for use.

This is used for mending leather, cementing leather upon wood, etc. Before using upon leather, the latter must be freed from fat by treatment with benzine.—D.

See also the rubber cements.

Cement for Iron.

XVIII.

Sulfur	av.oz. 6
White lead	av.oz. 6
Borax	av.oz. 1

Mix well and make into a paste with sulfuric acid.

Apply cement to the parts, using pressure and allowing to stand for 5 to 7 hours.

Leather Cements.

XIX. Cements for leather vary ac-

cording to the material to which the leather is to be attached—whether leather to wood, or to metals, or to another piece of leather. For the first, any good gelatin cement will answer. One of the best formulas, which also acts as a general cement for household purposes, is as follows: Soak gelatin in cold water over night. In the morning pour off any water that may remain unabsorbed, throw the gelatin on a towel and press off any superfluous water; then put it in a water-bath and heat until melted. Remove from the fire, and carefully add sufficient acetic acid to keep the gelatin liquid in moderately warm weather. Apply this plentifully to the leather, and lightly to the wood, join together, and put a weight on to keep in place for a short time.

XX. A cement for uniting leather to leather, as in the case of bands and pulleys, is made as follows: Soak 100 parts of best white glue in cold water over night, and treat as in No. XIX as regards draining and heating. When the glue becomes liquid add 2 parts of glycerin in which has been stirred 2 parts of powdered potassium bichromate. Increase the heat until the water in the bath boils, then remove and apply at once. Only as much as is necessary for immediate use should be made at one time, as the mixture becomes insoluble after cooling. This may be avoided by reserving the potassium chromate, and adding it only to the portion to be used just before it is applied.

XXI. A cement for leather to leather, in patching shoes, etc., is made by dissolving gutta percha in a mixture of 10 parts of carbon disulfid, and 1 part of oil of turpentine. Cut up the gutta percha as finely as possible, and add it to the mixture until a solution about as thick as molasses is obtained. Keep in a well stoppered bottle, and if the cement gets too thick add a little of the disulfid mixture. To apply this, the edge of the applied patch must be cham-

fered down as thinly as possible, and the surface of the shoe leather scraped until it is free from grease, blacking, etc. If the shoes have been oiled the grease must be got rid of by saturating the leather with ether or carbon disulfid, and pressing, on blotting paper, or a cloth, with a hot iron. Apply a coating of the cement to each piece (i.e., the patch and the leather to which it is to be joined), leave them for a few moments in order to allow the surplus of solvent to evaporate, then join and press closely together with a hot iron.

XXII. To join leather to metals, glass, etc., melt together equal parts of asphaltum and gutta percha, and apply hot.

Mending Mortars.

XXIII. Broken wedgewood mortars may be united by making a paste of calomel and mucilage of acacia, applying to the broken edges, binding the parts together firmly, and then setting aside for a week or so to "set" firmly.

XXIII. Fill a bottle one-fourth full of freshly-precipitated, washed and drained casein, fill the bottle with sodium silicate solution, and shake occasionally, until the casein is dissolved.

Use like the preceding.

Cement for Pestle Handles.

See Pestle Handles, To Cement.

Cement for Porcelain, Marble, Alabaster, Etc.

Use any of the casein cements, Diamond cement, or any of the cements recommended for mending crockery, glassware or mortars.

To Fasten Porcelain Letters to Windows.

See under Enameled Letters.

Puncture Cement.

A patented preparation for the automatic repairing of punctures in bicycle tires consists of glycerin holding gelatinous silica or aluminum hydrate in suspension. Three volumes of glycerin are mixed with one volume of liquid

water-glass and an acid is stirred in. The resulting jelly is diluted with three additional volumes of glycerin, and from four to six ounces of this fluid are placed in each tire. In case of puncture, the internal pressure of the air forces the fluid into the hole, which it closes.

Cement or Lute for Retorts, Etc.

XXIV.

Clay, powdered and sifted. .av.oz. 6
Rye flour.....av.oz. 3
Branav.oz. 1

Mix them well. When wanted, take a sufficient quantity and mix it with water to a dough to be applied to the retort or flask.—D.

Rubber Cements.

The preparations mentioned under "bicycle tire cements" are nearly all rubber cements. Here are some other formulas:

XXV.

Caoutchoucav.oz. 1
Rosindr. 1½
Venice turpentine.....gr. 45
Oil of turpentine.....fl.oz. 2
Chloroformfl.oz. 14
Mix all and dissolve by agitation.

XXVI.

Silicate Cement.

Glass, powdered.....av.oz. 1
Fine sand.....av.oz. 2
Solution of sodium
silicateav.oz. 6

Mix together quickly and use at once. This is a good cement for mending sandstone, and is useful in repairing the fronts of houses built of this stone. Any shade of the stone can be obtained by the addition of raw or burnt sienna or umber. It may also be used for mending cracks or chips in mortars and other stoneware.

Tire Cement.

See Bicycle Tire Cement.

Cement for Stoneware.

Use any of the cements mentioned as suitable for porcelain, crockery, glassware, etc., also Diamond cement, silicate cement, and some of the casein cements.

Water-Proof Cement.

XXVII. Cement absolutely water and acid-proof may be made by mixing 6 parts of Burgundy pitch, 1 part of shredded gutta-percha, and 3 parts of powdered pumice. Melt the gutta-percha very carefully add the pumice stone, and then the pitch previously melted. This is to be used while hot. It may be used for mending photographic trays, stoneware, woodenware and many other things.

See also Glue, Waterproof.

Winchell's Paste or Cement.

XXVIII. These are Prof. Winchell's own directions: Take 4 ounces of clear gum arabic, 3 ounces of fine starch and 1 ounce of white sugar. Pulverize the gum arabic, and dissolve it in as much water as the laundress would use for the quantity of starch indicated. Dissolve the starch and sugar in the gum solution. Then cook in boiling water, until the starch becomes clear. The cement should be as thick as tar, and kept so. It can be kept from spoiling by dropping in a lump of camphor, or a little oil of clove or sassafras. This cement is very strong and will stick to glazed surfaces, and is good to repair broken rocks, minerals, or fossils.

CHAIR-LEATHER POLISH.

See Leather Polish.

CHAMOIS SKIN, To Clean.

In a suitable vessel place a weak solution of sodium hydrate and add to this some soap shavings or soap solution. Throw the chamois into this, let soak for two or three hours, and then rub it clean. Rinse in clean tepid suds, wring out, wrap in a cloth and dry quickly. When dry, rub together or brush with a stiff brush, to restore softness.

Another method highly recommended is to rub the chamois thoroughly with soap, then allow it to remain for 2 hours in a weak, warm solution of sal soda, and rinse until clean. Instead of rinsing in clean water and removing all traces of soap, rinse in a weak, soapy

solution of soda, such as was used for washing in the first place. It is the soap left in the leather by the rinsing solution that keeps it soft and smooth. After rinsing, wring out the leather in a coarse towel and dry quickly; then brush well, and pull and rub it thoroughly in the hands. If this method is followed carefully the leather is said to come out soft and pliable.

CHEMICAL, GARDEN.

This may be prepared as follows:

Place a quantity of sand in a wide-mouthed bottle (or better, a half gallon fish-globe) to the depth of 2 or 3 inches; in this layer of sand, slightly imbed a few pieces of copper sulfate, aluminum sulfate, iron sulfate, chromalum, lead acetate, calcium chlorid, and magnesium and manganese sulfates; pour over the whole a solution of sodium silicate (commercial water-glass) one part and water three parts, care being taken not to disarrange the chemicals in pouring in the solution. Upon standing a week or so, a dense growth of the silicates of the various bases used will be seen in various colors, and fantastic shapes. Now displace the solution of the sodium silicate with clear water, by conveying a small stream of water through a small rubber tube (such as nursing bottle tubing) into the vessel, which will gradually displace the silicate of soda solution. Care must be taken not to disarrange or break down the growth with the stream of water. When successful, this produces a very beautiful scene. Other sulfates, such as those of chromium, cobalt, nickel, etc., may also be used.

The following so-called "metallic trees" are similar to the preceding: For a silver tree, dissolve two ten-cent pieces in 2 fluidrams of concentrated nitric acid, evaporating nearly to dryness to drive off excess of acid, cool, and dissolve the resulting crystalline salts in sufficient distilled water to make a saturated solution. This solution will be

slightly blue on account of the copper which is alloyed with coin silver. Place the solution in a glass vessel with a curved bottom. Add a drop of mercury the size of a large pea and set aside for 24 hours or place in the window. An arborescent growth of mercury and silver amalgam will be produced which may be kept indefinitely.

To make a lead tree place in a tall jar or wide-mouthed bottle a solution made by dissolving 4 ounces of lead acetate in one quart of water. Place the vessel where it will not be subject to vibration, and suspend in it a strip or cylinder of zinc; battery zinc answers the purpose very well. An abundant growth of crystalline spangles of metallic lead will collect on the zinc within 48 hours.

To grow a tin tree dilute commercial tin chlorid solution with 40 times its bulk of water and suspend a strip or pencil of zinc in it as in the case of the lead tree. The growth will be very similar to that of the lead tree.

CHIMNEY CLEANERS.

A mixture of 2 parts of common salt and 1 part of sulfur has been used for this purpose. A mixture of sal ammoniac and sulfur has also been used for this purpose.

See also under heading Stovepipes, To free from Soot.

CLEANING COPPER DRAIN BOARDS.

See Drain Boards, Copper, To clean.

CLEANING GREASY BOTTLES.

See Bottles, Cleaning Greasy

CLEANSING PREPARATIONS.

Under this heading are arranged a number of preparations that are used for removing stains and spots of all kinds, greasy, tarry, and otherwise, from clothing, various kinds of fabrics, carpets, rugs, etc.

Other cleansing preparations may be found under the headings Ammonia, Household; Benzin Jelly; Carpet Cleaners; Glove Cleaners; Stains from Fabrics, To Remove; and Soap, Ox-Gall.

Creams.

Under this heading are mentioned those preparations which are of a saponaceous character.

Various names are used for these preparations, such as Electric Cleansing Compound, Lightning Renovator, Japanese Cleansing Cream, Excelsior Cleansing Fluid, Erasine, Detergent Cream, Universal Cleanser, Magic Clothes Cleaner, etc.

The following would be suitable directions for these preparations:

To remove grease-spots from clothes.—Spread the part with the stains upon a table, putting a folded towel below the spots; rub in the cream in a circular direction by means of a sponge, then rinse in clear water.

To brighten black clothes.—Sponge the whole of the garment equally with the cream, first having removed any stains as above directed. Then hang out in the open air to dry, and iron if necessary.

To renovate carpets.—After thoroughly switching the carpet, or relaying after beating, take a stiff brush, such as a fibre scrubbing brush, and apply the cream over the whole surface, rubbing the stained parts hard. Finish off with a damp washing cloth.

To clean flannels.—A teacupful of the cream to be mixed with 10 gallons of water. In this mixture steep the flannels all night, and it will be found that they wash with ease next morning.

For cleaning paint.—Add a teacupful to a pailful of lukewarm water.

To clean windows.—Mix 1 part of the cream with 5 parts of plain water.

Wood or denatured alcohol may be substituted for ordinary alcohol in making these mixtures.

I.

Stronger ammonia water...f.dr. 4
Castile soap, white.....av.oz. 2
Glycerinf.oz. 2
Etherf.oz. 2
Water, to make.....f.oz. 64
To 32 fluidounces of water add the

glycerin, ether and ammonia, Shake well, add the soap in fine shaving and the remainder of the water, and shake often until the soap is dissolved.

II.

Castile soapav.oz. 1
Etherf.oz. 1
Alcoholf.oz. 1
Glycerinf.oz. 1
Ammonia water.....f.oz. 4
Oil of wintergreen.....f.dr. 1
Water, distilled, to make...f.oz. 64

Dissolve the soap in the water by the aid of heat, add the oil dissolved in the alcohol and ether, and incorporate the other ingredients.

III.

Castile soap.....av.oz. 1½
Alcoholf.oz. 1½
Etherf.oz. 1½
Glycerinf.oz. 1
Ammonia water.....f.oz. 3
Oil of citronella or
mirbanedrops 5
Water, to make.....f.oz. 64
Prepare like either of the preceding.

IV.

Soft (green) soap.....av.oz. 2
Potassium carbonate.....av.oz. ½
Ammonia water.....f.oz. 4
Water, to make.....f.oz. 64

Liquids.

These are used for the same purposes as the creams. These contain such ingredients as ether, chloroform, gasoline, ammonia water, oil of turpentine, etc. Preparations containing any considerable proportion of gasoline, benzine or ether must be handled very carefully to avoid proximity to any fires or artificial lights.

V.

Chloroformf.oz. 4
Etherf.oz. 1
Oil of bergamotf.dr. 2
Gasoline, to make.....f.oz. 32

VI.

Alcoholf.dr. 5
Chloroformf.dr. 5
Oil of sassafras.....f.dr. 5
Gasoline or benzin.....f.oz. 32

VII.

Etherf.dr. 1
Chloroformf.dr. 1

Ammonia water	f.dr.	1
Oil of wintergreen.....	f.dr.	1
Alcohol	f.oz.	1
Gasoline, to make.....	f.oz.	32

VIII.

Tincture of green soap....	f.oz.	2
Alcohol	f.oz.	8
Ammonia water.....	f.oz.	16
Water, to make.....	f.oz.	64

Powders.

Formulas for powders for cleaning gloves and fabrics may be found under the heading Glove Cleaners.

Soaps.

See also the heading Soap, O-Gall, and Benzin Jelly, also the soaps under Carpet Cleaners. In using the soap may be applied to the spot, then rinse the fabric in clean water.

IX.

Cocanut-oil soap.....	av.oz.	16
Fuller's earth.....	av.oz.	8
Water	sufficient	

Melt the soap with the smallest amount of water by the aid of heat, and incorporate the fuller's earth. This may be perfumed if desired. It may be put up in cakes wrapped in tin foil or a parchment paper or in small cans.

X.

Soap, in shavings.....	av.oz.	15
Potassium carbonate.....	av.oz.	3
Oil of turpentine.....	f.oz.	2
Water	sufficient	

Dissolve the soap and potassium carbonate in the smallest amount of water by the aid of heat, then incorporate the oil. This is best dispensed in cans.

XI.

Soft soap	av.lb.	3
Oil of turpentine.....	f.oz.	16

Melt the soap at a gentle heat, remove from the fire, and incorporate with the oil gradually added.

This is useful for removing stains, tar, grease, etc., from the hands. Rub the hands with a small piece, then wash with water. This will also remove the objectionable odor of iodoform.

CLOTH-CLEANING COMPOUNDS.

See under headings Benzin Jelly; Ammonia, Household; Cleansing Prepara-

tions; Glove Cleaners; Soap, Ox-Gall; and Stains from Fabrics, To Remove.

COCKROACH DESTROYERS.

See Roach Exterminators.

COLORED FIRES.

See Fires, Colored.

COLORING ELECTRIC LIGHT GLOBES.

See Electric Light Globes, To Color.

COLORING OF METALS.

See under the following headings: Bluing of Gun Barrels; Bronzing of Gun Barrels; Browning of Gun Barrels; Copper, Bluing of; Copper, Browning of; Silver, "Oxidizing" of; and Zinc, Coloring.

COPPER, BLUING OF.

Dissolve 1 part of Schlippe's salt in 15 of water, heat to boiling in a porcelain or porcelain-lined vessel, then introduce the copper, suspending the latter so it does not touch the sides of the vessel, allow it to remain until sufficiently affected, then remove, wash and dry.—H.

COPPER, Browning of.

I. Cleanse the copper thoroughly with emery paper, heat over a coal fire, then apply this solution:

Copper acetate	dr.	6
Ammonia chlorid	dr.	8½
Acetic acid, 30%	dr.	4
Distilled water	f.oz.	13½

Allow to dry and finally polish with a mixture of 1 part of wax and 4 of oil of turpentine.—D.

II. Ebermayer's process is this:

Ammonium carbonate	dr.	6
Copper acetate	dr.	3
Ammonium chlorid	gr.	72
Oxalic acid	gr.	18
Vinegar	f.oz.	16

Dissolve the ammonium carbonate and copper acetate in 4 fluidounces of vinegar, evaporate this to one-half its volume, add the ammonium chlorid and oxalic acid, previously dissolved in the remainder of the vinegar, heat the whole mixture, allow it to cool, and then filter.

Clean the medallion or other copper article, and boil in the prepared mix-

ture until it is covered with a yellowish-brown coating.

COPPER PLATING.

See Plating with Gold, Silver, Tin, etc.

COPPER. POLISHES FOR.

See Brass, Polishes for, which will serve as well for copper.

COPPER DRAIN BOARDS, TO CLEAN.

See Drain Boards, Copper, To Clean.

COPYING PADS.

See Hectograph Masses.

COPYING PAPER.

See Paper, Carbon.

CORKS, IMPERVIOUS AND ACID-PROOF.

The most common method of rendering corks impervious and acid-proof is to immerse them in melted paraffin. The following process leaves them supple while making them acid-proof and impervious: Plunge the corks into a solution of gelatin or common glue, 15 parts, in 24 parts of glycerin and 500 parts of water, heated to 44° or 48° C., and keep them there for several hours. On removing the corks, which should be weighted down in the solution, dry them in the shade until they are free from all surplus moisture. They are now perfectly tight, retaining at the same time the greater portion of their elasticity and suppleness. To render them acid-proof, they should now be treated in a mixture of petrolatum, 2 parts, and paraffin, 7 parts, heated to about 40° C. This second operation may be avoided by adding to the gelatin solution a little ammonium or potassium dichromate and afterwards exposing the corks to the light.

A patented process brought out some years ago consisted in immersing corks in a solution of caoutchouc, 1, in benzol, 19, drying the corks thus treated in a vacuum, and freeing from odor by exposure to air.

Another patented method of treating corks is to soak in a solution of casein

and then in formaldehyde solution, which latter hardens the casein.

COUNTERFEIT COIN DETECTOR.

Silver nitrate	gr. 24
Nitric acid, pure.....	drops 15
Distilled water	fl.oz. 1
Mix and dissolve.	

Apply a drop to the suspected coin by means of a glass rod. If any other metal than silver is present in larger quantities than the standard United States alloy, a black spot or stain will be produced on the coin.

CRAYONS for Writing on Glass.

These crayons are intended for writing on glass, porcelain and metal.

Black.

Lampblack	av.oz. 1
Wax	av.oz. 4
Talcum	av.oz. 1

White.

Zinc oxid	av.oz. 4
Wax	av.oz. 2
Talcum	av.oz. 1

Blue.

Prussian blue	av.oz. 1½
Wax	av.oz. 2
Talcum	av.oz. 1

Red.

Vermilion	av.oz. 2
Wax	av.oz. 2
Talcum	av.oz. 2

Yellow.

Chrome yellow	av.oz. 1
Wax	av.oz. 2
Talcum	av.oz. 2

The colors are incorporated with the molten wax, the talcum added and the whole rubbed together until cold. The mass is then formed into pencils by means of a hydraulic press.

If these crayons are intended for writing on bottles, the mass may be rolled out like a pill-pipe into pencils of the thickness of a lead pencil.

CROCUS MARTES.

See Jeweler's Rouge.

CROTON BUG EXTERMINATORS.

The same remedies may be employed for the extermination of croton bugs as are employed against roaches. See Roach Exterminators.

CUTTING OF GLASS, Bottles, Etc.

See Glass, Cutting of.

DANCE-HALL POWDER.

See Floor Wax in Powder.

DENATURED ALCOHOL.

There are at present two general formulas for denatured alcohol in use, either one of which may be used by any manufacturer who can use denatured alcohol.

The first and most common one is made up as follows:

Formula No. 1.

Ethyl alcohol	gall. 100
Methyl alcohol	gall. 10
Benzine	gall. ½

Where such a formula as this is required in an aqueous solution the benzine is of course thrown out, giving the solution a milky appearance. In this case the other general formula may be used.

Formula No. 2.

Ethyl alcohol	gall. 100
Methyl alcohol	gall. 2
Pyridine bases	gall. ½

Whenever generally denatured alcohol is ordered, Formula No. 1 will be shipped unless Formula No. 2 is specially ordered.

In addition to these two general formulas for denatured alcohol a number of special formulas have been authorized to be used in the manufacture of certain classes of goods. In order to buy these specially denatured alcohols it is necessary to obtain a permit first from the Collector of Internal Revenue, as a simple permit to use denatured alcohol will not suffice. Some of the special formulas are as follows:

Formula No. 3.

For the manufacture of celluloid, pyralin and similar products.

Ethyl alcohol	gall. 100
Methyl alcohol	gall. 5
Camphor	lb. 7

Formula No. 4.

For use in the manufacture of transparent soap.

Ethyl alcohol	gall. 100
Methyl alcohol	gall. 5
Castor oil	gall. 1
36° B. caustic soda solution	gall. ½

Formula No. 5.

For the manufacture of shellac varnish.

Ethyl alcohol	gall. 100
Methyl alcohol	gall. 5

Formula No. 6.

For the manufacture of smoking and chewing tobacco.

Ethyl alcohol	gall. 100
A mixture made as follows:	
Aqueous solution containing	
40% nicotine	gall. 12
Acid yellow dye	lb. 4/10
Tetrazo brilliant blue 12 B	
Conct.	lb. 4/10
Water, to make	gall. 100

Formula No. 7.

For the manufacture of photo-engravings.

Ethyl alcohol	gall. 100
Sulfuric ether	lb. 65
Cadmium iodid	lb. 3
Ammonium iodid	lb. 3

Formula No. 8.

For the manufacture of fulminate of mercury.

Ethyl alcohol	gall. 100
Methyl alcohol	gall. 3
Pyridine bases	gall. ½

DENATURED OLIVE OIL.

Olive oil may be imported into this country free of duty for use for mechanical or manufacturing purposes on the addition to each 100 gallons of the oil any of the following substances:

1. 3 gallons of rosin oil, preferably second or third runs.
2. 3 gallons of refined destructively distilled wood turpentine, boiling not lower than 100° C.
3. 3 gallons of mineral oil, such as spindle oil, or a rather crude kerosene.
4. ¾ gallon of pyridine.
5. ½ gallon of creosote.
6. 1 gallon of aniline oil.
7. 3 gallons of dark-colored oleic acid.
8. 16 ounces of oil of rosemary.
9. 6 ounces of oleoresin of capsicum.

Oil denatured according to 2, 4, 5 and 6 must be marked "poison."

(From the regulations of the Secretary of the Treasury, 1909.)

DENTISTS' AMALGAM FILLINGS.

The exact composition of these fillings is kept secret, but they are supposed to contain among other things mercury, gold, platinum, etc. The following formula may be used:

Tin, fine raspings.....	parts 31
Silver, fine raspings.....	parts 19
Mercury	parts 25

Mix, heat gently until dissolved, allow to cool, and press through chamois leather.

Another formula is the following:

Fletcher's platin-gold amalgam.	
Platinum	parts 1.30
Gold	parts 3.35
Silver	parts 43.35
Copper	parts 1.65
Tin	parts 50.35

Another formula is this:

Telchow's gold amalgam.	
Gold	parts 4.18
Silver	parts 55.00
Tin	parts 40.00

DENTAL ANTISEPTIC.

The following preparation, known as Howard's antiseptic, is used for rendering the tooth cavities and root canals antiseptic in dental work:

Carbolic acid	dr. 4
Oil of cassia.....	fl.dr. 1
Oil of clove.....	fl.dr. 1
Thymol	dr. 2
Glycerin	fl.dr. 1
Tannic acid	gr. 20

The cavities are saturated with the solution, then lightly packed with absorbent cotton dipped in the liquid, and finally sealed with a piece of cotton-wool saturated with sandarac varnish.

DENTISTS' ARSENIC PASTE or Nerve Destroyer.

I.	
Arsenous acid	parts 2
Morphine sulfate	part 1
Creosote, enough to form a stiff paste.	

This is used by dentists to destroy dental nerves so as to permit the filling of carious teeth. It should be used only under the direct supervision of a dentist.

II.

Arsenous acid,
Morphine hydrochlorid, equal parts of each.
Liquefied carbolic acid, enough to form a paste.
Cocaine hydrochlorid, 5%.

DENTISTS' MOLDING WAX.

Ordinary impression wax may be made by tempering paraffin wax with olive oil. This may be colored with rose pink or armenian bole. Here are other formulas:

I.

Resin	av.oz. 2
Olive oil	fl.oz. 4
Hard paraffin	av.oz. 6
Rose pink	sufficient

Melt the resin and paraffin and mix with the oil and coloring, stir constantly until cool. The amount of oil may be increased or decreased according to the consistence desired. Liquid petrolatum, cottonseed oil, or other oil may be substituted for the olive oil.

II.

Stearin	av.oz. 3
Copal resin	av.oz. 3
Talcum, powder	av.oz. 6
Carmine, powder	gr. 15
Oil of rose geranium.....	drops 20

Melt the copal by the heat of a sand bath, add the stearin, mix, remove from the fire, add the other ingredients and stir to produce a homogeneous mixture.

III.

Gum mastic	av.oz. 2
Castor oil	fl.oz. 1½
Yellow wax	av.oz. 10

DEVELOPERS for Photographs.

Pure chemicals and distilled water only must be used in preparing these liquids.

I.

Metol	gr. 48
Hydrochinone	gr. 48
Sodium sulfite, dried.....	gr. 375
Sodium carbonate, dried....	gr. 240
Distilled water, to make...	fl.oz. 16

Dissolve the sodium sulfite in a portion of the water and filter the liquid if not clear; then add the hydrochinone and sodium carbonate, dissolve by agi-

tation, add the metol last, and then the remainder of the water.

Most developers contain too much sulfite and when used the negative fogs before it is sufficiently developed.

This solution is never to be used if it has become milky.

This developer may be used with satisfaction for all kinds of paper and plates. It works better on paper if a few drops of a 10% solution of potassium bromide are added to it. For plates this solution should not be stronger than $\frac{1}{2}$ or even sometimes $\frac{1}{3}$.

II. Hauff's formula for separated developer:

Solution A.

Metolgr. 75
Sodium sulfite, crystal.....av.oz. $1\frac{1}{4}$
Distilled waterfl.oz. 10

Dissolve the metol completely in the water before adding the sulfite.

Solution B.

Potassium bromidegr. 8
Sodium carbonateav.oz. $1\frac{3}{4}$
Distilled waterfl.oz. 10

For most purposes, equal parts of Solution A and B are to be mixed; in some cases, equal parts of Solutions A and B and distilled water are used.

III. Hauff's One-Solution Developer:

Metolgr. 75
Potassium bromidegr. 8
Sodium sulfite, crystal.....av.oz. $1\frac{1}{4}$
Sodium carbonate, crystal.av.oz. $1\frac{3}{4}$

Dissolve the metol in the water before adding the other ingredients.

For most purposes, mix 1 part of this liquid with 1 of water; for some purposes, 1 part is mixed with 2 of water.

IV. Capt. Abney recommends the following as a developer for dry plates:

Solution A.

Potassium citrategr. 700
Potassium oxalategr. 200
Distilled waterfl.oz. $3\frac{1}{2}$

Solution B.

Ferrous sulfate, pure.....gr. 300
Distilled waterfl.oz. $3\frac{1}{2}$

For use, mix the two liquids in equal proportions.

V.

Pyrogalllic acid.....gr. 10
Sodium carbonategr. 75
Sodium sulfatedr. 2
Distilled waterfl.oz. 4

Develop the film or plate with this liquid, then transfer to a fixing bath composed of

Sodium hyposulfiteav.oz. 2
Waterfl.oz. 8

Keep the negative immersed in this liquid until it is clear, then wash in running water for half an hour.

DIAMOND DUST.

There are two kinds on the market, one being mica which has been split into thin sheets and then powdered. The other kind is powdered glass which may have been prepared by blowing glass into thin bulbs and powdering it. Or the glass may have been heated red hot and dropped into cold water. It may be still further powdered, after which it is to be sifted.

The two kinds may be distinguished by the softer feel of the mica.

DISINFECTANTS AND DISINFECTION.

The object of disinfection is to prevent the extension of infectious or contagious diseases by destroying specific infectious material, commonly known as bacteria, microbes or germs, which give rise to them. This is accomplished by the use of disinfectants.

Popularly the term disinfection is used in a much broader sense. Any chemical agent which destroys or masks bad odors, or which arrests putrefactive decomposition is spoken of as a "disinfectant." And in the absence of any infectious disease it is common to speak of "disinfecting" a foul cess-pool, or bad smelling stable, or privy vault.

This popular use of the term has led to much misapprehension, and the agents which have been found to destroy bad odors—deodorizers—or to arrest putrefactive decomposition—antiseptics—have been confidently recommended and extensively used for the destruction of dis-

ease germs in the excreta of patients with cholera, typhoid fever, etc.

The various consequences which are likely to result from such misapprehension and misuse of the word "disinfectant" will be appreciated when it is known that many of the agents which have been found useful as deodorizers, or as antiseptics, are entirely without value for the destruction of disease germs. This is true, for example, as regards the iron sulfate or copperas, a salt which has been extensively used with the idea that it is a valuable disinfectant. As a matter of fact, iron sulfate in saturated solution does not destroy the vitality of disease germs or the infecting power of material containing them. This salt is, nevertheless, a very valuable antiseptic, and its low price makes it one of the most available agents for the arrest of putrefactive decomposition in privy vaults, etc.

Antiseptic agents also exercise a restraining influence upon the development of disease germs, and their use during epidemics is to be recommended, when masses of organic material in the vicinity of human habitations cannot be completely destroyed, or removed or disinfected.

While an antiseptic agent is not necessarily a disinfectant, all disinfectants are antiseptics, for putrefactive decomposition is due to the development of "germs" of the same class as that to which disease germs belong, and the agents which destroy the latter also destroy the bacteria of putrefaction, when brought in contact with them in sufficient quantity, or restrain their development when present in smaller amounts.

A large number of the proprietary "disinfectants" so-called, which are in the market, are simply deodorizers or antiseptics, of greater or less value, and are entirely untrustworthy for disinfecting purposes.

Antiseptics are to be used at all times when it is impracticable to remove filth from the vicinity of human habitations,

but they are a poor substitute for cleanliness.

During the prevalence of epidemic diseases, such as yellow fever, cholera, typhoid fever, etc., it is better to use in privy vaults, cess pools, etc., those antiseptics which are also disinfectants—*i. e.*, germicides; and when the contents of such vessels are known to be infected this becomes imperative. Disease germs exist not only in dejecta, but also in the atmosphere; they may be attached to clothing, the germs of tuberculosis may exist in sputa, etc.

In the sick room we have disease germs at a disadvantage, for we know fairly well how to find them as well as how to destroy them. Having this knowledge, our efforts should be directed to restrict the dissemination and propagation of these germs.

The disinfectants that are of the most value depend on the immediate object to be accomplished. Experiments have shown that among the most efficient of all true disinfectants must be ranked corrosive sublimate. But this is poisonous also to the higher animals, and cannot, therefore, have universal application. For disinfecting excrementitious products, it must be considered the best agent there is, and it can be employed also in treating articles of clothing, etc., which should also be boiled before they are again used. Potassium permanganate, which is far less poisonous, is useful, especially from its deodorizing power. While these substances can be employed in the form of a spray, and thus diffused through an apartment, they should be replaced in many cases by gaseous agents, which can more readily pursue the disease germs floating in the air. Of gaseous disinfectants, choice is had between formaldehyde, sulfurous acid, chlorin and bromin, and to this list may be added also iodine. The results of recent researches prove that, of the agents available from their cheapness as disinfectants, corrosive sublimate, potassium permanganate, formaldehyde,

chlorin, bromin, and perhaps the zinc chlorid, are the only ones having sufficient germicidal power to be worthy of consideration.

Disinfectants and Antiseptics—Principles to be Regarded in Use of.

1. Seek to prevent the disease germs from finding lodgment where they can multiply or long retain life. To this end, houses, and especially hospitals and pest-houses, must be thoroughly ventilated. Scatter these germs where there is plenty of light and air, and they become harmless; in damp, dark spots they retain their vitality a long time, but sunlight, thorough desiccation, and the oxidizing action of the air, will speedily destroy them. There must be no neglected places about cellars or basements where they can hide themselves and thrive and multiply. Every part of the house, and, most of all, the drains, privy vaults, etc., whose function is to aid in disposing of refuse material, must be kept scrupulously clean. In the instruction issued by the National Board of Health, these points are emphasized and reiterated: "Disinfection cannot compensate for want of cleanliness nor of ventilation." "The most available agents in combating infectious diseases are fresh air and cleanliness."

2. Endeavor to prevent the propagation of these germs by sterilizing the soil on which they fall. Accumulations of refuse matter cannot be altogether avoided, but by the free use of antiseptics they can be kept in such a condition that spores will not readily germinate in them. It is well known that decomposing organic matter affords the most favorable possible soil for the growth of the lower forms of vegetable and animal organisms. While foul odors are not, in themselves, an evidence of the presence of contagion, they give warning that there is danger, and it is well to heed the warning.

3. Attack the germs themselves, and endeavor to lower or destroy their vital-

ity. This is what is to be accomplished by the use of disinfectants; but the germs are organisms of a very low grade of life, and are therefore not easy to kill. The study of the various disinfectants, with especial reference to their relative value in different diseases or under different circumstances, therefore becomes an important one. It is also essential to know the best means and modes of using them.

Disinfectants, When and Where to Use.

Disinfection of Excreta.—The infectious character of the dejecta of patients suffering from cholera and typhoid fever is well established, and this is true of mild cases and of the earliest stages of these diseases as well as of severe and fatal cases. It is probable that epidemic dysentery, summer complaint, diphtheria and other diseases are disseminated by means of the alvine discharges of the sick. These should therefore be thoroughly disinfected. In cholera, diphtheria, yellow fever and scarlet fever, all vomited material should be regarded as infectious and should be disinfected. As in tuberculosis, diphtheria, scarlet fever and infectious pneumonia, the sputa should be disinfected or destroyed by fire.

Disinfection of the Person.—The surface of the body of a sick person, or of his attendants, when soiled with infectious discharges, should be at once cleansed with a suitable disinfecting agent. For this purpose Labarraque's solution, diluted with five times its volume of water, may be used. After carefully washing soiled surfaces with this solution, the disinfectant itself is to be washed away with a towel wet with water or with diluted alcohol, 1 part to 10. The surface of the body of the dead may be disinfected by the use of the same solution, and cloths wet with this solution should be placed over orifices from which infectious material is likely to escape.

In diseases like small-pox and scarlet

fever, in which the infectious agent is given off from the entire surface of the body, occasional ablutions with Labarraque's solution, diluted with 20 parts of water, will be more suitable than the stronger solution above recommended.

Disinfection of Clothing.—Boiling for half an hour will destroy the vitality of all known disease germs, and there is no better way of disinfecting clothing and bedding which can be washed, than to put it through the ordinary operations of the laundry. No delay should occur, however, between the time of removing soiled clothing from the person or bed of the sick and its immersion into boiling water. If circumstances make it impracticable to do this at once, clothing should be immersed in a suitable disinfecting fluid.

For the complete disinfection of an apartment in which there has been a case of infectious disease, it is necessary to fill the room completely with formaldehyde vapor, chlorin, bromin or sulfurous acid gas, and to keep it shut up for several hours, until every crevice is thoroughly penetrated and permeated by the disinfectant. But this thorough use of disinfectants is only admissible for the prevention of contagion after the recovery or death of the patient.

Disinfection of Privy Vaults, Cess-Pools, Etc.—When the excreta—not previously disinfected—of patients with cholera or typhoid fever, have been thrown into a privy vault this should be infected, and disinfection should be resorted to as soon as the fact is discovered, or whenever there is reasonable suspicion that such is the case. This may be accomplished with corrosive sublimate or with chlorinated lime. The amount used must be in proportion to the amount of material to be disinfected.

Disinfection of Apartments.—In the sick-room no disinfectant can take the place of free ventilation and cleanliness. It is an axiom in sanitary science that it is impracticable to disinfect an occupied

apartment; for the reason that disease germs are not destroyed by the presence in the atmosphere of any known disinfectant in respirable quantity. Bad odors may be neutralized, but this does not constitute disinfection in the proper sense of the term. These bad odors are, for the most part, an indication of want of cleanliness or of proper ventilation; and it is better to turn contaminated air out of doors than to attempt to purify it by the use of volatile chemical agents, such as carbolic acid, chlorin, etc., which are all more or less offensive to the sick and are useless as far as real disinfection is concerned.

Use 1 pound of corrosive sublimate for every 500 pounds—estimated—of fecal matter contained in the vault, or 1 pound of chlorinated lime to every 30 pounds.

Disinfection of Ingesta.—It is well established that cholera and typhoid fever are very frequently and perhaps usually transmitted through the medium of infected water or articles of food, and especially milk. Fortunately there is a simple means at hand for disinfecting such infected fluids. This consists in the application of heat. The boiling temperature maintained for half an hour kills all known disease germs. So far as the germs of cholera, yellow fever and diphtheria are concerned, there is good reason to believe that a temperature considerably below the boiling point of water will destroy them. But in order to keep on the safe side it is best not to trust anything short of the boiling point, 100° C. (212° F.) when the object in view is to disinfect food or drink which is open to suspicion of containing the germs of any infectious disease.

During the prevalence of an epidemic of cholera, it is well to boil all water for drinking purposes, unless it comes from a source which is beyond suspicion, and especially if it is obtained from wells, or from rivers receiving the sewage of towns, etc. After boiling, the water may

be filtered, if necessary, and then cooled with ice placed around the water vessel, not put directly into the water.

Forms of Disinfectants.—Disinfectants may be used in the form of gases, as in chlorin, bromin or sulfur fumigation, or they may be used as liquids to be sprinkled about the sick room or poured upon cloths suspended about the room or poured upon excreta and other infected or infectious matter, or as liquids to be sprayed about the room by means of an atomizer (so-called aromatic disinfectants are used in this manner); they may be used as powders which consist of inert powder mixed with disinfectants; or the latter mixture may be formed into cakes; the disinfectants may also be used as pastilles, to be ignited in the room. The fumigating pastilles, powders, etc., of Part IV are also used with the idea of providing disinfection, but their disinfecting powers are very weak indeed. The incenses are also used for a similar purpose and are similarly inefficacious.

Formaldehyde as a Disinfectant.

Perhaps the most popular and most modern substance for room and house disinfection is formaldehyde, which is recognized by the U. S. P. under the name solution of formaldehyde and contains 40% of formic aldehyde. The latter substance is formed by the incomplete oxidation of methyl alcohol. Under certain conditions it forms a solid polymeric modification known as paraform.

Formaldehyde may be applied directly, in the form of a 5% solution, to substances that require disinfection, and in the case of refuse, excreta and similar substances should be thoroughly mixed with them. A 5% solution of formaldehyde is generally regarded as superior to carbolic acid of the same strength as a general disinfectant.

In disinfecting with gaseous formaldehyde it is important that the compartments to be disinfected be tightly

closed so that a sufficient concentration of gas may be held in contact with the infected substances a sufficient length of time. The temperature of the air is an important factor in securing efficient action, formaldehyde being much more energetic in a warm atmosphere than in a cold one. The best authorities state that gaseous formaldehyde disinfection should not be attempted if the temperature of air is below 10° C. The gas is most conveniently secured by liberating it from the 40% solution or from the solid paraform. A number of methods of accomplishing this, among which are the following:

Heating Under Pressure.—Portable autoclaves specially designed for the purpose are charged with a sufficient amount of formaldehyde, the quantity depending upon the cubic air space to be disinfected. The autoclave is closed and heat is applied until the required pressure within the autoclave is attained. The gas which has been liberated from the solution by the heat is allowed to flow through an outlet tube into the room or rooms which are to be disinfected. The room is then closed for 2 to 12 hours, the shorter time if only smooth surfaces are to be acted upon, the longer if penetration into fabrics is desired. Ten ounces of formaldehyde should be used for each 1000 cubic feet of air space.

Heating Without Pressure.—This method is similar to the preceding. The formaldehyde is placed in a specially designed retort and heated with a lamp. The gas is conducted into the compartment to be disinfected by means of a small tube which passes through the keyhole or other small aperture. The evolution of gas by this method takes place more slowly than when generated under pressure and a longer time is required for disinfection. The rooms should remain closed for at least 6 hours, and for 12 hours if penetration into the interior of fabrics, etc., is desired.

Spraying Method.—In this, the formaldehyde is sprayed upon the objects which require disinfection or upon sheets which are hung up in the compartment containing the infected materials. The gas is liberated by simple evaporation, this evaporation being favored by the wide surface which is exposed.

Chemical Means.—Several methods of liberating formaldehyde from the solution without the use of artificial heat have been proposed. The most important of these is known as the "permanganate method." The formaldehyde is poured on potassium permanganate when a violent chemical reaction takes place immediately, heat is generated, and a rapid liberation of formaldehyde gas takes place. Experiments have shown that when the formaldehyde and permanganate are mixed in the proportion of 6 of the former to 5 of the latter, by weight, 50% of the formaldehyde employed is liberated in the form of gas. Therefore twice as much formaldehyde will be required for disinfection as when any of the preceding methods are employed.

Heating Paraform.—Lamps provided with a pan for holding the paraform are obtainable. Place the paraform on the pan and apply heat by means of an alcohol lamp. The evolution of gas in this manner is slow. Two ounces of paraform are required for the disinfection of 1000 cubic feet of space.

Burning of Wood Alcohol.—There are various lamps made which incompletely burn or oxidize wood alcohol, formic aldehyde (formaldehyde) being the product of this oxidation.

Method of the Health Department of Chicago.—The Health Department of Chicago disinfects rooms and entire dwellings simply by suspending therein sheets thoroughly sprayed with formaldehyde. Sheets of ordinary size will hold from 5 to 6 ounces of liquid without dripping and this quantity has been found to be sufficient for the thorough

disinfection of 1000 cubic feet of air space, the rooms being sealed and allowed to remain closed for 5 hours. More than one sheet may be used if necessary. When the room is opened, the density of the gas is still so great as to preclude respiration until after doors and windows have been opened for some little time. On the other hand, the air is respirable within a very few minutes after the sheet has been removed, and there is no lingering smell of formaldehyde for days after, as is the case when the gas is evolved by the action of heat. This is due to the fact that some paraform is produced by the heat, this being retained in the meshes of the fabric, to be slowly converted into the gaseous form through several succeeding days.

Disinfectant Liquids of the N. F. and U. S. P.

The U. S. P. recognizes Solution of Zinc Chlorid and Solution of Chlorinated Soda, the N. F. mentions Compound Solution of Zinc and Aluminum and Compound Solution of Zinc and Iron. For formulas for these, see Part I. Other disinfectants are mentioned below.

I.

Aluminium chlorid	av.oz. 6
Calcium chlorid	av.oz. 3
Sodium chlorid	av.oz. 2
Zinc chlorid	av.oz. 1½
Water, to make.....	fl.oz. 32

Dissolve the aluminium and calcium salts separately, then mix and allow to settle. In the clear supernatant liquid dissolve the other ingredients.

This mixture may be aromatized by the addition of oils of eucalyptus and wintergreen, or oil of rosemary and thymol may be added.

II.

Alum	av.oz. 10
Sodium carbonate	av.oz. 10
Ammonium chlorid	av.oz. 2
Sodium chlorid	av.oz. 2
Zinc chlorid	av.oz. 1
Muriatic acid, commercial,	
Water, of each.....	sufficient

Dissolve the alum in $\frac{1}{2}$ gallon of boiling water, then add the soda which precipitates the aluminium hydrate. Muriatic acid should then be added in sufficient quantity to dissolve the precipitate. The other salts should then be dissolved in 3 pints of water; this should be added to the first solution, and then enough water added to make 1 gallon.

III.

Cresylic acid	av.oz. 40
Rosin	av.oz. 8
Caustic potash	av.oz. 1, dr. 1
Water, to make.....	gall. $\frac{1}{2}$

Place the cresylic acid in a suitable dish, add the rosin, and apply heat until the latter is melted and dissolved. Dissolve the potassa in about 5 fluidounces of water, add to the previous mixture and boil until the rosin is completely saponified as shown by the liquid becoming clear and homogeneous. Cool and add enough water to make $\frac{1}{2}$ gallon.

If the caustic potash is less than 85% in strength, more of it will be required. If saponification is not completed after 30 minutes boiling, it is an indication that more caustic potash is needed.

The cresylic acid for this purpose is the crude article, which may be purchased cheaply.

DOSES, RULES FOR.

Wiggins' rules for doses are as follows:

1. The dose of all infusions is 1 to 2 fluidounces, except digitalis, which is 2 to 4 fluidrams.

2. All poisonous tinctures, 5 to 20 minims, except tincture of aconite, which is 1 to 10 minims.

3. All wines, from $\frac{1}{2}$ to 1 fluidram, except wine of opium, which is 5 to 15 minims.

4. Most solid extracts can be given in doses of $\frac{1}{2}$ to 1 grain; the exceptions are the extracts of poisonous drugs.

5. All diluted acids, from 5 to 20 minims, except hydrocyanic acid, which is from 2 to 5 minims.

6. All waters, from 1 to 2 fluidounces, except chloroform, creosote, cherry-laurel, bitter almond, and ammonia waters.

7. Medicated syrups, usually from $\frac{1}{2}$ to 2 fluidrams.

8. Mixtures, from 1 to 4 fluidrams.

9. Spirits, from $\frac{1}{2}$ to 1 fluidram, except spirit of glonoin.

10. Essential oils, 1 to 5 drops.

Young's rule to determine the dose of a child is to divide the age of the child by the age plus 12; the quotient represents the portion of the adult dose to be given to the child. For example: The age of the child is 6; divide 6 by 6 plus 12 = $6/18 = \frac{1}{3}$; a 6-year-old should receive $\frac{1}{3}$ of the dose given to an adult.

DRAIN BOARDS, Copper, To Clean.

Copper drain boards at bars and soda fountains may be cleaned quickly and satisfactorily with the following mixture:

Whiting	parts 4
Tripoli	parts 3
Oxalic acid, powder.....	part 1

DRIERS FOR PAINTS AND VARNISHES. (Siccatives.)

Manganese borate alone may be used as a solid drier; however, its action is usually too powerful, and it is generally mixed with other substances. The following mixtures are used: Zinc oxid, 4 parts, manganese borate 1 part; and equal parts zinc oxid and manganese borate.

The manganese borate may be prepared from the residue remaining after the extraction of chlorin from a mixture of black oxid of manganese and hydrochloric acid.

Cobalt borate may be employed instead of the manganese borate.

Liquid drier may be produced by heating 100 parts of linseed oil over the naked flame, stirring constantly until it weighs 85 parts.

DYES FOR EASTER EGGS.

See Egg Dyes (liquid and dry).

DYES, DOMESTIC.

The formulas here given are the old-fashioned kind which housewives used before the various coal-tar dyes became so common. The different dyewoods were used, usually in conjunction with a mordant, also various chemicals such as copperas, blue vitriol, oxalic acid, alum, Prussian blue, ferrocyanid and bichromate of potash, sugar of lead, etc.

All goods should be well washed with soap and water before dyeing, rinsed thoroughly with clean water, and then immersed in the dyeing liquid. In making the latter, the chemicals and extracts that are used should be thoroughly dissolved, and the solutions should always be strained to remove insoluble particles or mechanical impurities.

The dyeing liquid is usually employed in a hot or boiling condition, and the goods dyed in it should be stirred about almost constantly to permit of an even distribution of the dye, that is, to prevent spotting.

Fresh water, such as rain water, should be used whenever possible, as the salts in hard water decompose some of the chemicals used in dyeing.

The volume of liquid used should always be sufficient to completely cover the goods. If it does not do so, more water must be added and, if necessary, more of the dye.

The quantities in the formulas here given are usually sufficient for from 1 to 2 pounds of goods.

I. Black (for cotton and wool):

Extract of logwood.....av.oz. 2
Copper sulfateav.oz. 1

Dissolve each one separately in hot water. Saturate the goods in the copper solution, then pour this liquid into the logwood solution. Keep the mixture at almost the boiling point for 20 minutes; if the goods is cotton, boil for 10 minutes. The goods should be stirred constantly to prevent spotting. To set the color, dissolve 8 ounces of common salt in a gallon of hot water, dip the goods in this solution, let remain until

cold, and then hang them up to dry without wringing.

Instead of the extract of logwood, 1 pound of the chips may be used.

II. Blue (for cotton and wool):

Copperasav.oz. 1
Potassium ferrocyanid ...av.oz. $\frac{1}{2}$
Sulfuric acidm. 160,

Boil the goods in a solution of the copperas in water. In a brass or enameled kettle, dissolve the ferrocyanid in water, add the acid, then transfer the goods from the copperas solution to the ferrocyanid solution. If the color is not satisfactory, repeat this process several times.

Or use the following:

Prussian blueav.oz. 1
Oxalic acidav.oz. $\frac{1}{2}$

Dissolve together in hot water, soak the goods in the solution until the desired shade is obtained, then wring out, and rinse in alum water.

Or the following may be used:

Red prussiate of potash....av.oz. 2
Tartaric acidav.oz. $\frac{1}{2}$
Oxalic acidav.oz. $\frac{1}{2}$
Mordant No. 2 (see below).fl.dr. 3

Dissolve the solids in water heated to near the boiling point, add the mordant, soak the goods in the liquid for 1½ hours, then remove them, drain, rinse in clean water, and hang up to dry.

III. Brown (for cotton and wool):

Catechuav.oz. 2
Copper sulfateav.oz. $\frac{1}{4}$
Potassium bichromateav.oz. $\frac{1}{4}$

Dissolve the catechu in water, immerse the goods in the liquid, and boil for 20 minutes, stirring constantly meanwhile. Also dissolve the two salts in water, remove the goods from the catechu solution, allow them to drain fairly well, then transfer them to the second solution, and allow them to remain until they have the desired shade. Finally rinse in clean water and hang up to dry.

The following is a lighter color for wool only:

Fusticav.oz. 5
Madderav.oz. 3
Camwoodav.oz. 2½
Cream of tartar.....av.oz. $\frac{3}{4}$

Boil this mixture for 10 minutes with water, allow to cool, strain, add the goods, boil for about an hour, stirring frequently meanwhile, then add $\frac{1}{2}$ av. ounce of copper sulfate dissolved in water, boil again for 20 minutes, then add $\frac{3}{4}$ av. ounce of copperas to the solution to darken the color, rinse the goods in clean water, and hang up to dry.

IV. Drab (for wool):

Camwood	av.oz.	$\frac{1}{4}$
Sumach	av.oz.	$\frac{3}{4}$
Fustic	av.oz.	$\frac{3}{4}$
Logwood	av.oz.	$\frac{1}{4}$
Cream of tartar.....	av.oz.	$\frac{1}{2}$

Boil this mixture with water for 10 minutes, strain, immerse the goods in the liquid, and boil for an hour, stirring frequently meanwhile. Then add $\frac{3}{4}$ av. ounce of copperas, previously dissolved in some water, to the dyeing liquid, and continue boiling for 20 minutes. Then allow to cool, drain the goods, rinse in clean water, and hang up to dry.

V. Green (for cotton and wool):

Color the goods blue as described above, then treat with the yellow dye. The combination of blue and yellow makes the green color.

VI. Olive (for wool):

Two liquids are to be prepared.

A.

Potassium bichromate	av.oz.	$\frac{1}{2}$
Cream of tartar.....	av.oz.	$\frac{1}{2}$
Alum	av.oz.	$\frac{1}{4}$

B.

Fustic	av.oz.	3
Madder	av.oz.	3
Logwood	av.oz.	1

Dissolve the salts in A in water and boil the goods in this solution for an hour. Allow the liquid to cool, remove the goods, allow them to drain, and rinse in clean water. Then boil the solids in B with water for 10 minutes, strain the liquid, soak the goods in this solution, agitate thoroughly, and boil slowly for one-half hour; then to the liquid add $\frac{1}{2}$ av. ounce of copper sul-

fate, stir the goods thoroughly again, remove from the liquid, allow them to drain, rinse in clean water, and hang up to dry.

VII. Orange (for cotton and wool):

Color yellow according to the formula for yellow dye and before rinsing in fresh water, dip the goods in lime water.

This one is for cotton only:

Annatto	av.oz.	$\frac{1}{2}$
Soda ash	av.oz.	2

Macerate the two in enough warm water practically to dissolve them, strain the liquid, and add enough hot water to cover the goods. Then introduce the latter, allow to remain 15 minutes, stirring constantly meanwhile, then remove from the bath, allow them to drain, rinse in clean water, and hang up to dry.

VIII. Pink (for wool):

Boil $\frac{1}{2}$ av. ounce of powdered cochineal for half an hour with water, strain to remove all solid matter. Immerse the goods in alum water until thoroughly soaked, then transfer to the cochineal liquid, and allow to remain until the desired shade is obtained.

IX. Purple (for wool and cotton):

Boil up 2 av. ounces of cudbear with some water. First immerse the goods in saleratus water (sodium bicarbonate) until well saturated, then wring out, and transfer to the cudbear liquid, allowing to remain for half an hour. If a darker shade is desired, again dip the goods in saleratus water, then transfer to cudbear liquid to which 2 av. ounces of alum has previously been added.

X. Red (for wool):

Alum	av.oz.	3
Cream of tartar.....	av.oz.	1
Mordant No. 1 (see below).	fl.oz.	1

Dissolve in water, immerse the goods in the solution, boil for about 2 hours, then remove from the liquid, and drain for about 12 hours. Mix 12 ounces of madder with some water, boil for a short time, strain the liquid, immerse the goods, and bring the whole to boiling for about 12 hours. Finally remove

the goods, allow them to drain, rinse in fresh water, and hang up to dry.

XI. Scarlet (for wool):

Cochineal, powderav.oz. 1
 Cream of tartar.....av.oz. $\frac{3}{4}$
 Mordant No. 1 (see below).fl.oz. 2

An iron kettle should be used. Mix the cochineal with the water, bring to a boil, and add the cream of tartar and mordant. Then immerse the goods and boil for an hour, stirring the goods constantly meanwhile; remove them from the bath, rinse in fresh water, and hang up to dry.

XII. Slate (for wool):

Sumacav.oz. $\frac{1}{2}$
 Cudbearav.oz. $\frac{1}{2}$
 Logwoodav.oz. $\frac{3}{4}$
 Cream of tartar.....av.oz. $\frac{1}{2}$

Boil these substances with water till well extracted, strain the liquid, to the latter add the goods, and boil slowly for an hour. Then to the bath add $\frac{3}{4}$ ounce of copperas, first dissolved in some water, continue the heat for another 20 minutes, remove the goods, rinse them in fresh water, and finally hang them up to dry.

XIII. Stone color (for wool):

Logwoodav.oz. $\frac{1}{4}$
 Madderav.oz. $\frac{1}{2}$
 Sumacav.oz. 1
 Fusticav.oz. $1\frac{1}{4}$
 Cream of tartar.....av.oz. $\frac{1}{2}$

Prepare like the preceding, using $\frac{3}{4}$ av. ounce of copperas to darken the goods.

XIV. Yellow (for cotton and wool):

Lead acetateav.oz. 2
 Potassium bichromateav.oz. 1

Dissolve the salts separately in water; dip the goods first in the lead water until well saturated, then wring out, and dip in the bichromate solution; then rinse in fresh water, and hang up to dry. Repeat the process if the color is not deep enough.

The Mordants.

No. 1.

Cream of tartar.....av.oz. 2
 Metallic tinav.oz. 2
 Hydrochloric acidav.oz. 10
 Sulfuric acidav.oz. 6

Nitric acidav.oz. $\frac{3}{4}$
 Waterfl.oz. 4

Mix the first three ingredients in a stone vessel, then add the sulfuric acid previously diluted with the water, and finally stir in the nitric acid, adding the latter slowly.

No. 2.

Metallic tinav.oz. $\frac{1}{2}$
 Hydrochloric acidav.oz. 10
 Sulfuric acidav.oz. 10
 Nitric acidav.oz. 10
 Waterfl.oz. 10

Prepare like the preceding.

DYEING OF LEATHER.

I. Black:

Treat with a solution of ferrous sulfate or iron acetate. The leather may first be mordanted with a solution of extract of logwood.

II. Blue:

Extract 150 grains of nutgall with 32 fluidounces of water and brush the leather with this liquid. Then brush over with a solution of 150 grains soluble blue aniline and 75 grains of glue in 32 fluidounces of water. Use each mixture three times, then dry and finish with yolk of egg.

III. Brown:

Apply an intimate mixture of 4 av.oz. of umber (raw or burnt), $\frac{1}{2}$ av.oz. of lampblack, and 17 fluidounces of oxgall.

IV. Green:

Dissolve 1 av. ounce of alum in 1 gallon of water which furnishes the mordant.

The dye consists of 4 av. ounces of indigo-carmin dissolved in 7 pints of boiling water, 2 pints of strong decoction of fustic, and 8 fluidounces of logwood.

V. Red:

Apply a tincture made from 1 av. ounce of cochineal and 16 fluidounces of 80% alcohol.

VI. Yellow:

Extract 1 av. ounce of turmeric and $\frac{1}{2}$ av. ounce of gamboge with 24 fluidounces. The leather requires mordant-

ing with a solution of alum or potassium carbonate before applying the dye.

DYEING with Tube Paints.

Another process for dyeing fabrics of all kinds, feathers, etc., is by means of tube paints. Any desired color may be obtained by using the corresponding paint. The latter must always be fresh and soft to obtain a satisfactory result. The immersing liquid is to consist of 1 ounce of chloroform, 1 ounce of ammonia water, and 1 gallon of gasoline, although the latter alone would probably work just as well. To dye the goods rub up the paint with some chloroform to a thin paste and add a sufficient quantity of the immersing liquid to dilute properly. Then pass the feathers, fabric, or other goods through the liquid, and wave them about in the air for a moment when they will be entirely dried. This is a very expeditious process. If one dipping does not yield a satisfactory color, the article may be redipped.

EGG COLORS (Liquid).

Easter egg colors or dyes may be prepared in the liquid form by adding a solution of any suitable aniline or coal tar dye in wood alcohol to a solution of shellac in wood alcohol. If the odor of wood alcohol be objectionable, a highly purified methyl alcohol (there are various brands now obtainable) or ordinary alcohol may be used instead. The shellac may be replaced with mastic if its color interferes in any way with the beauty of the dyes.

About 2 av. ounces of the resin should be dissolved in enough alcohol to make a pint of solution. Sufficient of the coal tar dye solution is to be added to impart the proper tint, the amount required depending upon the coloring power of the dye and upon the concentration of the solution.

This liquid dye may be put up for sale in 2-dram square vials with a brush attached to the stopper, in a manner

similar to liquid corn cure. In using, boil the eggs for 5 minutes in water, then remove them one by one, dry them well, and paint on the dye.

EGGS OF PHARAOH'S SERPENTS.

See Pharaoh's Serpents.

ELECTRIC LIGHT GLOBES, to Color.

Either of the following two formulas is entirely satisfactory:

I. Dissolve any desired aniline dye (according to the color wanted) in alcohol, making a strong solution, then mix this with about twice its volume of collodion. The dye used must be perfectly soluble in the alcohol and collodion as otherwise the coloring of the globes will be opaque.

In using, immerse the globes in the liquid, then withdraw them, and turn them about so that the coating will be even. Then allow to dry, which takes place very quickly. If a heavier coating is desired, the globes must be dipped again in the liquid.

II. Make a solution of the white of one egg in a pint of soft or distilled water, and filter, taking care that no bubbles remain on the surface of the liquid. The globes should be carefully cleaned and polished, and then dipped in this solution and hung up by a string to dry. After about half an hour, they should be dipped a second time to insure a perfect coating. When perfectly dry, dip in the coloring solution which is to be made by dissolving 10 to 30 grains of any suitable coal-tar dye in 4 fluidounces of collodion, taking care that the dye is perfectly dissolved, as any undissolved particles will "spot" the globe. If the first coat does not make the globes dark enough, they may be dipped again after they have become dry. A straight-sided graduate or similar vessel with straight sides is the best container for the coloring solution, as less liquid will be required than if some other container were used.

III.

White shellac	av.oz.	3
Rosin, powder	av.oz.	1
Benzoin	dr.	1
Alcohol	fl.oz.	10

Dissolve the resins by frequent agitation, filter, and in the liquid dissolve any desired aniline color. The rosin may be omitted.

The liquid is to be applied to the bulbs as in Nos. 1 and II.

EMBALMING FLUIDS.

These preparations contain such substances as arsenic, formaldehyde, thymol, boric acid, saltpeter, glycerin and alcohol, arsenic having been in the past the favorite ingredient, it being now generally replaced by formaldehyde.

I. The following is said to have been approved by the National Funeral Directors' Association of the United States:

Boric acid	oz.	1
Borax	oz.	2½
Potassium nitrate	oz.	2½
Glycerin	oz.	4
Solution of formaldehyde.....	oz.	11
Solution of eosin (1%).....	m.	30
Water, to make.....	fl.oz.	80

Dissolve the acid, borax and niter in 48 fluidounces of water, then add the glycerin, formaldehyde, eosin and balance of the water.

II. This formula is used by Mr. Wagner, secretary of the Missouri State Board of Embalmers:

Mercuric chlorid.....	dr.	3
Zinc chlorid.....	dr.	4
Arsenic	av.oz.	1½
Sodium chlorid.....	av.oz.	2¼
Alum	av.oz.	3
Solution of formaldehyde	fl.oz.	10 to 20
Water, to make.....	fl.oz.	80

Dissolve the solids in a portion of the water, then add the formaldehyde and the remainder of the water.

III. Dr. Hewson of Philadelphia, recommends the following:

Sodium arsenate.....	av.oz.	16
Glycerin	fl.oz.	16
Formaldehyde	fl.dr.	6 to 9
Water	fl.oz.	64

Dissolve the arsenate in the water

by the aid of heat, allow to cool, and add the other ingredients.

This solution is said to perfectly preserve subjects (or specimens immersed in the solution), the body or specimens retaining the appearance presented by the healthy parts immediately after death.

IV. Wickersheimer's Preserving Fluid. This is said to be the formula in Berlin:

	For	For
	Injecting	Immersing
Arsenous acid.....	gr. 30	gr. 22
Potassium carbonate.....	gr. 28	gr. 20
Potassium nitrate.....	gr. 50	gr. 36
Potassium sulfate.....	gr. 375	gr. 280
Sodium chlorid.....	gr. 150	gr. 120
Wood alcohol.....	fl.oz. 3	fl.oz. 3
Glycerin	fl.oz. 16	fl.oz. 16
Water	fl.oz. 80	fl.oz. 80

Dissolve the arsenic and potassium carbonate in some of the water by the aid of heat, dissolve the other salts in the remainder of the water, mix the two solutions, and add the other ingredients.

V. The following non-poisonous substitute was recommended by Hager in place of the preceding:

Salicylic acid.....	dr.	4
Boric acid.....	dr.	5
Potassium carbonate.....	dr.	1
Oil of cinnamon.....	dr.	3
Oil of clove.....	dr.	3
Glycerin	fl.oz.	5
Alcohol	fl.oz.	12
Water	fl.oz.	12

Dissolve the first three ingredients in water and glycerin by the aid of heat, dissolve the oils in the alcohol, and mix the two solutions.

VI. Dr. Tilton of the U. S. Army advises the following:

Solution of zinc chlorid, U. S. P.....	gall.	1
Solution of sodium chlorid (6 oz. to 1 pint).....	pints	6
Solution of mercuric chlorid (1 oz. to 1 pint).....	pints	4
Alcohol	pints	4
Carbolic acid, pure.....	fl.oz.	8
Glycerin	fl.oz.	24

Mix glycerin and carbolic acid, then all the other ingredients, when a clear solution of three gallons results, which

is the proper amount for a body weighing 150 pounds.

This may be injected into the aorta, but it is much less trouble to inject into the brachial or femoral artery, or the femoral vein. An anatomical syringe is desirable, but a gravity apparatus that will answer all purposes may be improvised with rubber tubing, stop-cock, etc. A fluidram is sufficient to preserve each ounce of animal weight. For human bodies it is well to calculate $2\frac{1}{2}$ fluidounces per pound weight.

ENAMELED LETTERS, To Fasten to Glass.

A thick mixture of white lead with varnish, will make a good cement for this purpose.

ETCHING COPPER, Liquid for.

Solution of ferric chlorid,
U. S. P. fl.oz. 13
Sodium chlorid. av.oz. $4\frac{3}{4}$
Mix and dissolve.—H.

ETCHING OF GLASS, TIN AND ZINC.

See Ink, Diamond, Ink for Writing on Metals, and Ink for Zinc Labels. Also the next subject.

ETCHING OF GLASSWARE.

Very often the druggist would like to etch glassware such as reagent bottles and their stoppers, receiving bottles for percolates and filtrates, etc. The only available method for doing this on the small scale is by means of hydrofluoric acid gas generated for this purpose from calcium fluorid and concentrated sulfuric acid.

The glass to be etched is first cleaned with soap and water to remove all traces of grease, then dried, after which it is to be covered with a thin coating of melted wax or paraffin which may be applied by means of a suitable brush or swab, or the article, if small, may be dipped directly into the melted wax or paraffin. The design to be etched on the glass may be traced by means of a needle, knife point or other similar means which will suggest itself. The excess of wax is to be brushed off

and all the lines of the design should be clear. As stated a mixture of calcium fluorid and concentrated sulfuric acid is used for etching. A lead dish is the only kind suitable for mixing these two substances. This may be made from any available piece of lead like a short section of lead pipe cut open down the side and then hammered out. Fill the dish about one-third full with powdered calcium fluorid, then add enough of the sulfuric acid to make a thin paste, stirring with a stick of wood. The object to be etched is laid over the dish with the engraved side down in such a manner that the two fit quite snugly. Allow the whole to remain for from 2 to 4 hours, after which the wax is to be removed by scraping and washing with gasoline. If it is desired to make the design more visible, a little black varnish may be rubbed into the etched parts.

Hydrofluoric acid gas is a very deleterious substance to inhale and is dangerous even when it comes in contact with the skin. Great care should be exercised during this etching process and the operation should be done under a hood or out of doors.

See also "diamond ink" under heading Inks, Miscellaneous.

ETCHING IRON AND STEEL **Liquid for.**

- I.
Corrosive sublimate.....av.oz. $\frac{1}{2}$
Tartaric acid.....gr. 20
Nitric acid.....m. 15
Waterfl.oz. 12
Mix and dissolve.—H.
- II.
Tincture of iodine.....fl.oz. $8\frac{1}{2}$
Potassium iodid.....av.oz. 1
Distilled water.....fl.oz. 5
Mix and dissolve.—H.

III. This is an excellent formula for etching steel, marking cutlery, and the like:

Copper sulfate.....gr. 15
Sodium chloridgr. 10
Waterfl.oz. 10
Mix and let stand for 1 or 2 hours.

In using cover the steel first with soap or melted wax, trace the design with some sharp instrument, then apply the solution with a brush, allowing it to etch into the metal. After a few minutes the object can be dipped into hot water and the wax or soap be removed.

FEATHERS, BLEACHING OF.

Feathers turned yellow are bleached according to one process by soaking them for a few hours in a warm soap bath (78 to 85° C.) which should not be too strong, rinsing and exposing them, strung upon a thread, for some time to the sun, frequently moistening them meanwhile.

According to another process, the feathers, after having been treated in the warm soap bath, should be rinsed off and transferred to water acidulated with sulfurous acid. Here they should be allowed to remain for 20 or 30 hours, then washed, drawn through a weak, lukewarm soap bath, and dried in the sun, or left in the sun for 1 or 2 days, being frequently moistened.

According to Dobereiner, a solution of ammonium carbonate is the best means of bleaching feathers as it effects the purpose much quicker than sulfurous acid.

FERTILIZERS.

These are intended for the fertilization of garden, and flowering plants. They are put up in powder form and sold under such names as "Plant and Flower Food," "Lawn Fertilizers," "Chemical Food for Plant," "Plant Invigorator," etc.

I.

Ammonium sulfate.....av.oz.	8
Potassium nitrate.....av.oz.	4
Sugar	av.oz. 2

Each ingredient in moderately fine powder is mixed by passing through a sieve. It could be put up in packages to sell for 25 cents per pound. The directions for use are: One teaspoonful in a gallon of water, to be used in

sprinkling upon the plant after sun-down about twice a week.

II.

Calcium phosphate.....av.oz.	4
Potassium nitrate.....av.oz.	1
Potassium phosphate.....av.oz.	1
Magnesium sulfate.....av.oz.	1
Iron (ferric) phosphate	gr. 90 to 175
Mix well.	

In using, mix 30 grains with 1 quart of water and with this sprinkle the plants.

A superior mixture is produced by using instead of the insoluble calcium phosphate, the soluble acid "superphosphate."

III.

Sodium phosphate.....av.oz.	4
Sodium nitrate.....av.oz.	3
Ammonium chlorid.....av.oz.	2

If this is to be dispensed in liquid form, this mixture should be dissolved in 5 pints of water. When used the solution should be diluted with 100 times the proportion of water.

IV. This was recommended by the Horticultural Review for fertilizing lawns:

Potassium nitrate.....av.oz.	2
Sodium nitrate.....av.oz.	2
Calcium sulfate.....av.oz.	2
Calcium superphosphate....av.oz.	2

One ounce of this mixture is sufficient for 10 gallons of water.

FILTER PAPER TOUGHENED.

Filter paper may be toughened by immersing in concentrated nitric acid and washing with water. It is then remarkably toughened, the product being pervious to liquids, and quite different to the parchment paper made by means of sulfuric acid. It can be washed like a piece of linen. So treated it contracts in size, and the ash is diminished, the weight is slightly reduced, and it contains no nitrogen. The toughened paper can be used with the vacuum-pump in ordinary funnels, without extra support, and fits sufficiently close to prevent undue access of air, which is not the case with parchment paper.

Another admirable way of preparing filters is this: Dip only the apex of the folded paper into nitric acid, and then wash with water; the weak part is thus effectually toughened.

FIRES, COLORED.

The so-called "colored fires" are composed essentially of three kinds of ingredients, viz.: a combustible, an oxygen producer, and a coloring agent. The cheaper "fires" usually contain sulfur as a combustible, while the better ones contain shellac, sometimes lycopodium. Those containing sulfur are not adapted to indoor use because of the irrespirable sulfurous acid gas which is produced. It is to be noted, also, that "fires" containing a poison like an arsenic compound or calomel are also not to be employed for in-door use.

The second kind of ingredient, the oxygen producer, is usually potassium chlorate or potassium nitrate.

The coloring agents depends, of course, upon the color desired—a barium salt being used for red, a strontium salt for green, a copper salt for blue, etc.

The ingredients of "fires" should always be quite dry; in fact, it may be necessary to dry them before mixing. They should also be in moderately fine powder. Shellac, which, as is stated, is a common ingredient of these "fires," may be reduced to requisite fineness by grinding in a drug mill. The ingredients now dried and powdered may be mixed by means of the hand or a wooden (not steel) spatula. Triturating or rubbing in any way like to cause much friction, must be avoided because of the danger of spontaneous combustion.

Fireworks manufacturers are said to make these "fires" by melting the shellac, stirring in the color-bearing compound (barium or strontium nitrate, etc.), allowing the mixture to cool, and granulating. Then potassium chlorate and other ingredients are then added.

To increase the brilliancy, metallic magnesium is sometimes added in the proportion of about one dram to the pound.

So-called "tableau lights" are colored fires, and being then intended almost entirely for indoor use, there should be no sulfur, arsenic, mercury, or other deleterious substances present, as stated above.

A "quick light" for "touching off" tableau lights may be made by mixing 30 grains each of potassium chlorate and sugar. This is about or sufficient quantity for one light. Place it alongside of the tableau light and set fire to it.

The rapidity of combustion of these "fires" or "lights" depends upon the proportion of the various ingredients. If, for example, there is a large proportion of the combustible ingredient, shellac or sulfur, the mixture burns more rapidly than when a smaller proportion is present. The formulas given on these pages may therefore be varied somewhat by increasing or decreasing the combustible, according as a rapid or slow "fire" is wanted.

Blue Fire.

These "fires" are of different shades of blue.

I.

Sulfur	av.oz. 2
Potassium sulfate.....	av.oz. 2
Ammonio-sulfate of copper.....	av.oz. 2
Potassium nitrate.....	av.oz. 3½
Potassium chlorate.....	av.oz. 3½

II.

Potassium nitrate.....	av.oz. 8
Antimony sulfid, black.....	av.oz. 4
Zinc (metallic).....	av.oz. 2

III.

Potassium chlorate.....	av.oz. 6
Alum, dried.....	av.oz. 3
Shellac	av.oz. 2
Sulfur	av.oz. 1

IV.

Potassium chlorate.....	av.oz. 6
Calcium carbonate.....	av.oz. 2
Malachite, powder.....	av.oz. 1½
Sulfur	av.oz. 1½

Brilliant Stars.

Potassium nitrate.....	av.oz. 8
Sulfur	av.oz. 2
Black antimony.....	av.oz. 2

Make this into a stiff paste with this solution:

Isinglass	fl.oz. 1
Diluted acetic acid.....	fl.oz. 4
Alcohol	fl.oz. 7

Form into small pieces, and while still moist roll in meal gunpowder.

Crimson Fire.

I.

Strontium nitrate.....	av.oz. 11
Sulfur	av.oz. 4
Charcoal, willow.....	av.oz. 1
Potassium chlorate.....	av.oz. 1

II.

Strontium nitrate.....	av.oz. 7
Potassium chlorate.....	av.oz. 2
Shellac	av.oz. 4
Charcoal	av.oz. 1

Golden Rain.

I.

Potassium nitrate.....	av.oz. 8
Gunpowder	av.oz. 8
Sulfur	av.oz. 5
Charcoal	av.oz. 2
Lampblack	av.oz. 1

Mix and fill into paper tubes.

II.

Potassium nitrate.....	av.oz. 8
Sulfur	av.oz. 4
Gunpowder	av.oz. 4
Charcoal	av.oz. 1
Lampblack	av.oz. 1

Green Fire.

I.

Potassium chlorate.....	av.oz. 4
Barium nitrate.....	av.oz. 14
Sulfur	av.oz. 5

Boric acid may be substituted for the barium nitrate.

II.

Barium nitrate.....	av.oz. 12
Potassium chlorate.....	av.oz. 4
Shellac	av.oz. 4

Boric acid may be substituted for the barium nitrate.

III.

Barium nitrate.....	av.oz. 12
Potassium chlorate.....	av.oz. 4
Shellac	av.oz. 4
Lycopodium	dr. 3

Boric acid may be substituted for the barium nitrate.

Lilac Fire.

Potassium chlorate.....	av.oz. 6
Shellac	av.oz. 3
Chalk	av.oz. 3
Black oxid of copper....	av.oz. 1

Orange Red Fire.

Chalk	av.oz. 8
Sulfur	av.oz. 3
Potassium chlorate.....	av.oz. 12

Purple Fire.

Black antimony.....	av.oz. 1
Copper oxid.....	av.oz. 3
Sulfur	av.oz. 6
Potassium nitrate.....	av.oz. 6
Potassium chlorate.....	av.oz. 12

Red Fire.

See also Crimson, Orange Red, and Rose Fires.

I.

Strontium nitrate.....	av.oz. 12
Shellac	av.oz. 3

II.

Strontium oxalate.....	av.oz. 1
Lycopodium	av.oz. 1
Milk sugar.....	av.oz. 4
Potassium nitrate.....	av.oz. 4
Potassium chlorate.....	av.oz. 13

III.

Strontium nitrate.....	av.oz. 8
Sugar	av.oz. 4
Potassium chlorate.....	av.oz. 1

IV.

Potassium chlorate.....	av.oz. 4
Shellac	av.oz. 4
Strontium nitrate.....	av.oz. 12

V.

Strontium nitrate.....	av.oz. 12
Potassium chlorate.....	av.oz. 4
Shellac	av.oz. 4
Lycopodium	dr. 3

Rose Fire.

Potassium nitrate.....	av.oz. 8
Corn meal	av.oz. 2
Charcoal	av.oz. ½

Violet Fire.

See also Lilac and Purple Fires.

Calcium carbonate.....	av.oz. 2
Malachite	av.oz. 2
Sulfur	av.oz. 2
Potassium chlorate.....	av.oz. 6

White Fire.

I.	Stearic acid.....av.oz.	1
	Barium carbonate.....av.oz.	1
	Milk sugar.....av.oz.	4
	Potassium nitrate.....av.oz.	4
	Potassium chlorate.....av.oz.	13

II.	Stearic acid.....av.oz.	1
	Sulfur.....av.oz.	1
	Black antimony.....av.oz.	3
	Potassium nitrate.....av.oz.	6

Yellow Fire.

I.	Sodium nitrate.....av.oz.	12
	Potassium chlorate.....av.oz.	4
	Shellac.....av.oz.	4
II.	Sodium oxalate.....av.oz.	6
	Shellac.....av.oz.	6
	Potassium nitrate.....av.oz.	7
	Potassium chlorate.....av.oz.	7

FIREWORKS PAPERS.

These are sheets of bibulous paper saturated with appropriate solutions which, when ignited, burn for a longer or shorter time, as the case may be, with a brilliant colored flame resembling "Bengal lights" (see Fires, Colored).

The formulas here given emanate from a French authority.

The directions for making these papers are to steep unsized papers in the solutions, suspend the papers on a string stretched across a warm room, and allow to dry. Then roll tightly into rolls of suitable length, according to the length of time they are to burn. By rolling tightly a sheet of paper 12 by 16 inches may be made to burn for several minutes.

In making these papers, every precaution against fire should be taken. In making the solutions, water-bath heat should be used.

Fuses.

An igniting paper, for "touching off" fireworks, may be made as follows:

Potassium nitrate.....dr.	1½
Lead acetate.....av.oz.	4
Water.....fl.oz.	10

Mix and dissolve the solids. In this solution place sheets of blotting or

other unsized paper, heat the liquid nearly to boiling, and keep at this temperature for 20 minutes. If the paper is to be "slow," it may be removed from the liquid, hung on strings to dry, cut into strips, and then rolled. If a quick-burning paper is wanted, the heating should be repeated with a fresh charge of the solution.

FIRE-EXTINGUISHING HAND GRENADES.

The following are supposed to represent the results of analyses of these preparations:

Harden's Extinguishing Grenade.—The solution contains 18.46% of sodium chlorid and 8.88% of ammonium chlorid.

Hayward's Extinguishing Grenade.—The solution contains 15.7% of calcium chlorid, and 5.6% of magnesium chlorid.

Hayward's Hand Grenade.—The solution contains calcium chlorid, 18.4%; magnesium chlorid, 5.7%; sodium chlorid, 1.3%; potassium bromid (?), 2.2%; barium chlorid, 0.3%.

Martin's Fire Protector.—Glycerin, 2½ ounces; ammonium carbonate, 4 drams; ammonium chlorid, 10 drams; boric acid, 10 drams; potassium bitartrate, 1 dram; and potassium oxalate (?), 1 dram.

Munich Fire Annihilating Powder consists of sodium chlorid, 43%; alum, 19.5%; sodium sulfate, 5%; sodium carbonate, 3.5%; silica, 6.6%; water, 22.3%.

Schoenberg's Fire Annihilator.—The solution contains 1.66% of sodium carbonate, and 6.43% of sodium chlorid.

FIRE EXTINGUISHERS, Dry.**I.**

Potassium nitrate, powder.....av.oz.	15
Sulfur, powder.....av.oz.	9
Charcoal, wood, powder...av.oz.	1
Colcothar or rouge.....av.oz.	¼

Dry them thoroughly, then mix them, and fill into round pasteboard boxes holding 5 pounds. Through an orifice in the side a fuse is introduced, which

extends some 4 inches inward and about 6 inches outward. The latter end is fastened on the outside of the box, and a strip of red paper pasted upon it, bearing the inscription "light here."

These extinguishers are intended for use in closed rooms, and automatically. This acts by absorbing oxygen.

II.

Sodium chlorid.....	av.oz. 3
Ammonium chlorid.....	av.oz. 3
Sodium bicarbonate.....	av.oz. 4

III.

Ammonium chlorid.....	av.oz. 5
Sodium sulfate.....	av.oz. 3
Sodium bicarbonate.....	av.oz. 2

FIRE EXTINGUISHERS, Liquid.

These solutions coat or encrust the burning substance with incombustible saline substances so as to prevent or at least hinder further burning.

I.

Calcium chlorid, crude....	av.oz. 4
Sodium chlorid.....	av.oz. 1
Water	fl.oz. 15

The resulting solution is thrown into the fire by a hand-pump. The burning portions become incrustated and cease to be combustible.

II.

Calcium chlorid.....	av.oz. 20
Salt	av.oz. 5
Water	fl.oz. 75

III.

Sodium nitrate.....	av.oz. 1
Sodium chlorid.....	av.oz. 1
Ammonium chlorid.....	av.oz. 1
Magnesium chlorid.....	av.oz. 1
Water	fl.oz. 16

IV. A fire-extinguishing preparation patented in 1881 was directed to be made from borax, sodium bicarbonate, aluminum sulfate, and sodium bisulfate.

V. Lauber's Fire Extinguisher is said to consist of a 6% aqueous solution of a mixture of sodium chlorid, 50 parts sodium bicarbonate 30 parts and alum 20 parts.

VI. The Babcock fire extinguisher is charged with a solution of sodium bicarbonate in water and sulfuric acid

contained in a lead bottle which, when required, is turned over by a crank, spilling the acid into the soda solution. The carbonic acid gas generated creates a pressure sufficient to force the water through the nozzle. About 5 parts of acid to 6 parts of soda, by weight, are considered the proper proportions. Other combinations are used such as ammonium carbonate, potash, etc.

FIREPROOFING FABRICS, WOOD, PAPER, ETC.

While fireproofing materials are used and formulas are here given, it should not be understood that the articles "fireproofed" really cannot burn; the preparation will simply hinder the rapid progress of the fire so as to permit of easy and rapid extinction.

Among the substances used for fireproofing are the following: Solution of sodium silicate, sodium tungstate, sodium hyposulfite, boric acid, zinc chlorid, calcium acetate, iron sulfate, copper sulfate, and common salt, but ammonium phosphate, or compounds containing it, are said to be the best of all, and sodium tungstate ranks next in efficiency.

I. Several years ago the Commissioner of Buildings of Chicago recommended or approved the following fireproofing preparation as an application to wood, fabrics, etc., in theaters and other places:

Dissolve in a suitable vessel one and one-half pounds of acid ammonium phosphate (diammonium phosphate) in a gallon of hot water. In another vessel mix three ounces of starch with 20 grains salicylic acid. Then add to this powder mixture enough hot water to make a thick paste, stirring the mass. Then add the ammonium phosphate solution, gradually, to the starch paste, so as to obtain a homogeneous liquid. Of this solution not less, or not much less, is to be applied than the material (cloth or wood) is capable of absorbing.

FIXING BATH for Photography.

Very often a solution of sodium hyposulfite in water is used, also the following:

I. Stanley Acid Fixing Bath:

Sodium hyposulfite.....av.oz. 8
 Alumav.oz. $\frac{1}{2}$
 Distilled water.....fl.oz. 32
 Dissolve and filter.

II.

Sodium hyposulfite.....dr. 8
 Sodium sulfite, dried.....dr. 4
 Chrome alum.....dr. 4
 Sulfuric acid.....m. 30
 Distilled water, to make...fl.oz. 32

Dissolve the hyposulfite in half the water, dilute the acid with some water, dissolve the sulfite in some of the water, and the chrome alum in the remainder of the water. Add the diluted acid to the sulfite solution, then the hyposulfite solution, and finally the alum solution.

If this solution is milky or becomes so, it is unfit for use.

This is to be used for plates or paper without dilution.

III. See also Toning Solutions.**FLASH-LIGHT POWDERS.**

These powders are employed by photographers for taking negatives in imperfectly lighted places, or in the absence of good daylight. When blown into an alcohol flame these powders flare up suddenly, producing an intense actinic light. Finely pulverized magnesium (metal) alone may be used for this purpose; some claiming for this the best results, but it is also combined with gun cotton in the proportion of 2 parts to 1 of the latter. Other combinations of magnesium are also used. Of late, aluminum metal is displacing magnesium, it being more economical and comparatively smokeless, while magnesium produces a dense and persistent smoke.

It must be remembered that these powders are very explosive and must be prepared only in small quantities, as wanted. They should be mixed, not by trituration, but on a sheet of paper by

means of a horn or wooden spatula or a card.

If desired, these powders may be dispensed in small capsules or envelopes of paper saturated with sodium or potassium nitrate. In this case it is only necessary to apply a match to the envelope to set off the charge of powder.

I.

Magnesium (powder).....av.oz. 3
 Potassium permanganate...av.oz. 2

II.

Magnesium (powder).....av.oz. 4
 Potassium permanganate...av.oz. 4
 Barium peroxid.....av.oz. 2

III.

Magnesium (powder).....av.oz. 3
 Antimony sulfid, black...av.oz. 1
 Potassium chlorate.....av.oz. 6

IV.

Magnesium metal.....av.oz. 4
 Potassium bichromate.....av.oz. 3
 Potassium permanganate...av.oz. 3

Pulverize separately and mix carefully.

V.

Magnesium metal.....av.oz. 4
 Aluminum metal.....av.oz. 2
 Potassium chlorate.....av.oz. 3
 Potassium permanganatedr. $4\frac{1}{2}$

FLEA EXTERMINATORS.

There are two kinds of fleas, the human flea and the dog and cat flea and either one may infest a house. Practically all cats and dogs are inhabited by fleas and thus easily become a source of infestation. The eggs of the dog and cat flea are deposited among the hairs of the animals but inasmuch as they are not attached to the hairs, numbers of them drop off whenever the animal moves and wherever he lies down. A rug or piece of carpet should therefore be provided for the animal to lie upon and this should be shaken out frequently and the dust and dirt thus obtained should be gathered up and burned; or the rug may be treated with hot water which will effectually destroy all eggs.

To Expel from a House.

I. To destroy fleas in a house or to

expel them it has been recommended to throw or spray benzine or gasoline in the corners and all the crevices. A safer method is to sprinkle the floor thickly with quicklime, or better yet use good insect powder freely. Cleaner methods are to lay sprigs of pennyroyal herb around the rooms, also to sprinkle or spray with an atomizer the following combination:

Oil of pennyroyal.....	f.oz. 2
Oil of sassafras.....	f.oz. 2
Alcohol	f.oz. 4

II.

Carbolic acid.....	gr. 100
Oil of bergamot.....	m. 50
Cologne water.....	f.oz. 4
Diluted alcohol.....	f.oz. 4

This is to be sprayed about the room, on clothing bedding, etc.—H.

III.

Oil of bergamot.....	m. 50
Oil of thyme.....	m. 50
Benzol	f.oz. 1
Alcohol	f.oz. 3

Use like the preceding.—H.

To Remove from Animals.

The U. S. Department of Agriculture recommends the free application of good insect powder, then wrapping the dog or cat in a towel for about half an hour, when the fleas will be found dead in great numbers.

IV. The New Hampshire Experiment Station has found creolin to be the most satisfactory remedy for the pest. For dogs a 3% solution is recommended, and for cats a 2% solution. The animal should be thoroughly washed, and the application will destroy the adult fleas as well as the larvæ. The application should be made as soon as any infestation of dogs and cats is observed. It may be applied to dogs and cats by washing with the hand or brush or by submerging animals in the prepared solution.

FLOOR OILS.

So-called "floor oils" are various oily mixtures, such as the following:

I. Neatsfoot, cottonseed and yellow paraffin oils, each equal parts.

II. Paraffin oil, 8 parts, kerosene and lime water, each equal parts.

III. Fish oil, 8 parts, paraffin oil and lime water, each 1 part.

These are to be brushed on the floor or they may be applied occasionally by means of a mop. They are supposed to prevent the dust from rising.

While these mixtures when applied to floors naturally prevent, to an extent, dust from rising, they have some objectionable qualities. Nos. II and III for example have the odor of kerosene and fish oil. The greasiness or non-drying property is also objectionable as this may do damage to rugs, carpets, clothing, etc. The customary way of oiling floors is apply boiled linseed, preferably mixed with some of the turpentine or japan dryer. This dries to a tough, resinous coating without any greasiness. Another method of oiling floors is with a solution of wax in oil of turpentine.

FLOOR WAX in Powder. (Ballroom or Dance-Hall Powder.)

Floor waxes may be in both liquid and powder forms. The latter are coarse, such as will pass through a No. 10 or 20 sieve, and are used by sprinkling on the floor. The ingredients of these waxes are various waxy matters, sometimes in combination with talcum or boric acid.

I.

Paraffin wax	av.lb. 1
Boric acid, powder.....	av.lb. 7
Oil of lavender flowers....	f.dr. 1
Oil of neroli.....	m. 20

Melt the paraffin, add the boric acid and the oils, mix well, and pass the mixture through a coarse sieve.

The oils may be omitted as they are not necessary.

II.

Spermaceti	av.oz. 4
Paraffin wax.....	av.oz. 4
Talcum, powder.....	av.oz. 8

Shave the spermaceti and paraffin quite fine, mix with the talcum, and pass through a No. 10 sieve.

III.

Stearin, powder.....av.oz.	20
Yellow wax, powder.....av.oz.	5
Soap, powder.....av.oz.	2

IV.

Stearin, powder.....av.oz.	16
Yellow wax, powder.....av.oz.	4

FLOOR WAX OR POLISH, Liquid.

Instead of sprinkling floor wax in the powder form on dancing floors, which is a crude but simple way of treating floors prior to dancing, floor wax or polish in liquid form should be preferred as this makes a more satisfactory result. The base of these polishes is usually beeswax which is either emulsionized with an alkaline solution or is dissolved in oil of turpentine.

The floor to be treated should be thoroughly cleaned and thoroughly dry. If not perfectly smooth, it should be made so by sandpapering or scraping followed by sandpapering. If there is any old paint, varnish or polish on the floor it should be removed with lye, then thoroughly washing and drying the floor.

In using the polish it should be applied in a thin coat, allowed to dry thoroughly, then rubbed hard with brushes or cloths until a suitable gloss is obtained.

The following preparations have been highly recommended as floor polishes:

I. Dieterich's formula:

Yellow wax.....av.oz.	8
Potassium carbonate.....av.oz.	1
Oil of turpentine.....fl.oz.	1
Waterfl.oz.	32

Heat the wax and water to boiling; add the potassium carbonate; boil another minute or until the wax is emulsified; remove the vessel from the fire; add the oil, and stir until cold.

If the floor is well preserved, 16 fluid-ounces more of water may be added. A brown color may be produced by adding sienna or umber, and a very dark brown, by the further addition of lamp-black.

II. Hager's formula:

Yellow wax.....av.oz.	8
Potassium carbonate.....av.oz.	4
Waterfl.oz.	52

Heat the wax in an iron vessel with 40 fluidounces of water until the wax is melted, then add the potassium carbonate dissolved in the remainder of the water and boil together until solution is effected.

If it be desired to color the polish, add $\frac{1}{2}$ to 1 av. ounce of annatto previously dissolved in a little alcohol.

III. Hager's formula:

Yellow waxav.oz.	5
Paraffin wax.....av.oz.	2
Stearic acid.....av.oz.	10
Oil of turpentine.....fl.oz.	6
Benzinfl.oz.	7

Melt together by a gentle heat (waxes and acid), add a sufficient quantity of burnt sienna thoroughly triturated with linseed oil varnish. Then add with a constant stirring (remote from fire), the oil and benzin.

IV.

Yellow wax.....av.oz.	5
Soapav.oz.	1
Potassium carbonate.....av.oz.	$\frac{3}{4}$
Waterfl.oz.	68

First dissolve the soap in 10 fluid-ounces of water, heating gently, then add the wax, and boil. When the wax begins to come to the surface, add the potassium carbonate dissolved in 10 fluidounces of water; heat for 20 minutes more, and then add the remainder of the water.

V.

Yellow waxav.oz.	10
Ceresinav.oz.	10
Burnt sienna.....av.oz.	2
Oil of turpentine.....fl.oz.	12

Melt the wax and ceresin at a gentle heat, add the sienna previously triturated to a smooth paste with a small amount of boiled linseed oil, mix well, allow to cool somewhat and then incorporate the oil of turpentine or as much of it as is required to make a mass of the consistence of an ointment.

The burnt sienna may be used in larger or smaller quantity, according to the tint desired, or it may be replaced by raw sienna, etc.

VI. A simpler preparation than any of the preceding is a solution of 1 part of yellow wax in 2 parts of oil of turpentine, prepared by melting the wax on a water bath and then incorporating the oil.

This polish will be as satisfactory as others if applied in a thin coat and the floor be rubbed thoroughly hard, when dry, until a good polish is obtained.

FLOWER FOOD.

See Fertilizers.

FLOWERS, Coloring of.

See Coloring Flowers.

FLY EXTERMINATORS.

There are several species of flies, the most common being the ordinary house fly. There is also a large blue bottle fly and a small fly, also a horse or stable fly which latter is the only kind that bites. The U. S. Department of Agriculture determined, by means of a series of experiments that flies are propagated in horse manure and that the fly pest might be overcome by treating the manure with chlorid of lime or kerosene or by keeping it in closed screened boxes.

Fly exterminators are of different kinds, such as papers, powders, pastilles, etc. The papers which are now so largely employed are of several varieties, viz.: sticky, poisonous or arsenical, and non-poisonous. Full directions are given below for making these preparations.

Fly Lime.

What is known as "fly lime," which is sold largely in Europe, consists of the mixtures used in the formulas for sticky fly paper. These mixtures are spread upon plates or saucers, which are then set about the room, or are painted upon sticks, which are then hung around in convenient places.

Fly Paper (Arsenical or Poison).

I.

Potassium arsenate, crystal. av. oz. 1
Sugar av. oz. 4
Water fl. oz. 48

Dissolve and saturate heavy unsized paper in the solution; afterward hang it up to dry on strings. The paper should be stamped or printed as poisonous previous to immersion in the liquid. Potassium arsenate should be employed, or this prepared from arsenic acid, instead of the arsenite—the form official in Fowler's Solution. While arsenic acid is more readily taken of by flies, it has the further advantage of being non-poisonous to the hands.—D.

II.

White arsenic.....av. oz. ½
Potassium carbonate.....av. oz. 2
Sugar av. oz. 8
Water gall. ½

Mix, dissolve, and saturate paper as in the preceding.

III.

Arsenic, powder,.....av. oz. 1
Potassium carbonate.....av. oz. 1
Molasses oz. 2
Water, to make.....gall. ½

Boil the first two ingredients with a quart of water until they are dissolved, then add the molasses and the remainder of the water.

Soak sheets of paper in this liquid for 2 or 3 hours, then hang them up to drain and dry.

Fly Paper (Bichromate).

IV.

Potassium bichromate.....av. oz. 2
Sugar av. oz. 1
Oil of black pepper.....dr. 4
Alcohol fl. oz. 4
Water fl. oz. 24

Mix thoroughly; macerate for several days, and filter off the liquid. In this solution soak unsized absorbent paper, allow to dry, and again soak and allow to dry.

Fly Paper (Cobalt).

V.

Tartar emetic.....gr. 90
Cobalt chlorid.....av. oz. 1

Quassia chips.....av.oz. 8

Tincture of long pepper

(1 in 4).....fl.oz. 8

Waterfl.oz. 40

Mix, macerate for 7 days, agitating occasionally, and filter. Prepare the paper like the preceding.

Fly Paper (Non-Poisonous).

As a so-called non-poisonous fly paper may be used either the bichromate, cobalt or quassia fly papers.

Fly Paper (Quassia),

VI.

Quassia chips.....av.oz. 8

Sugarav.oz. 4

Watersufficient

Pour 32 fluidounces of water over the quassia chips, allow to stand over night, strain and boil the liquid down to 16 fluidounces; then boil the chips with 16 fluidounces of water until 8 fluidounces remain. Mix well together, allow to stand for several days; filter, soak sheets of absorbent paper in the filtered liquid and drain and dry the paper.

VII.

Quassiaav.oz. 16

Molassesav.oz. 2½

Distilled water.....fl.oz. 80

Macerate the wood, in coarse powder, in the water for 24 hours, then boil for one hour, strain, add the molasses and evaporate the whole to 16 fluidounces. Prepare the paper like the preceding.—D.

Fly Paper (Sticky).

VIII.

Rosinav.oz. 6

Lard oil.....fl.oz. 2

Balsam of fir.....av.oz. 1

Melt the rosin upon a water bath, add the other ingredients and spread upon paper. The paper should be ordinary printing paper, which has previously been "sized," by applying a coating of a thin solution of white glue by means of a sponge, and hung up to dry.

The sticky compound is put on whilst warm by means of a brush, and the paper is then folded together. The proportion of resin must be varied to suit the changes in the temperature.

IX. A good composition is a mixture of 2 parts of rosin to 1 of castor oil, melted together, and applied hot with a flat brush to suitable paper. The proportions may be varied according to the nature of the oil or rosin or the time of the year.

Fly Pastilles.

X.

Potassium nitrate, powder..av.oz. 1½

Mucilage of tragacanth....fl.oz. 2

Insect powder.....av.oz. 2

Althæa, powder.....dr. 2

Tragacanth, powder.....dr. 2

Intimately mix the potassium nitrate with the mucilage; also mix the other ingredients together, then incorporate the powdery mixture with the paste, divide the whole into pastilles weighing about 30 grains, and dry at a temperature of 20 to 25° C. The pastilles may be bronzed or gilded, if desired.—D.

The fumes of these pastilles when ignited in a room will destroy flies and other insects.

Fly Pencils.

XI.

Eucalyptol (or oil of

eucalyptus)fl.dr. 1½

Oil of bay.....drops 20

Petrolatumav.oz. 2½

Paraffin wax.....av.oz. 2

To the paraffin previously melted the oils should be added and the mixture then molded into sticks.—D.

This is used for penciling the body exposed to the attacks of flies.

XII.

Eucalyptolm. 100

Oil of anise.....m. 25

Paraffin oil.....fl.oz. 2¼

Paraffin wax.....av.oz. 2½

Prepare and use like No. XI.—D.

Fly Powders.

Good insect powder (pyrethrum) is the best but here are formulas for other powders:

XIII.

Long pepper.....av.oz. 4

Quassiaav.oz. 4

Sugarav.oz. 8

Diluted alcoholfl.oz. 4

The solids should be in very fine

powder, should be well mixed, and then mixed with the diluted alcohol, dried, and reduced to fine powder.—D.

Fly Preventives.

XIV. A 20% tincture of insect powder in alcohol is recommended for application to exposed portions of the body to prevent attacks of flies. It is also to be sprayed about the room when mixed with an equal volume of water.—D.

XV.

Eucalyptol	m.	20
Oil of anise.....	m.	20
Camphor	gr.	100
Tincture of insect powder (20% in alcohol)...	fl.oz.	4
Use like the preceding.—D.		

FREEZING MIXTURES.

The lowering of temperature produced by the solution of salts has its commonest illustration in the use of a mixture of salt and ice in the freezing of ice cream. A temperature of zero is readily obtained.

In using freezing mixtures, various salts are used which should be in very fine powder and should be perfectly dry. The vessel should previously be cooled, and cool water should be employed. If the mixture be produced from one salt and water, the former may be recovered by evaporation, and after thorough drying and powdering, it may be used over again. A mixture of salts may be recovered in the same manner and used over again.

Lowering of temperature by solution of a salt is promoted in many cases to a considerable degree by the presence of a diluted acid. The freezing mixture should be made in a vessel of low conductivity, such as earthenware, while the container of the mixture to be chilled should be as good a conductor of heat as possible.

I.

Ammonium chlorid.....	av.oz.	3
Potassium nitrate	av.oz.	1
Potassium chlorid.....	av.oz.	6
Dry each substance and powder, and		

then to the mixtures add 10 fluidounces of cool water.

The temperature depression amounts to 30° C.

II.

Ammonium chlorid.....	av.oz.	3
Potassium nitrate.....	av.oz.	3
Sodium sulfate, in small crystals	av.oz.	5

Dry the ammonium and potassium nitrate, reduce to powder, add the sodium sulfate, and then mix with 11 fluidounces of cold water.

The temperature depression amounts to 25° C.

III.

Ammonium nitrate, powder	av.oz.	10
Cold water.....	fl.oz.	10

The temperature depression amounts to 30° C.

IV.

Sulfuric acid, commercial..	fl.oz.	10
Water	fl.oz.	5
Sodium sulfate, powder...	fl.oz.	3

Mix the acid and water, allow the mixture to cool to the temperature of the atmosphere, and add the sodium sulfate.

V.

Sodium sulfate.....	av.oz.	8
Hydrochloric acid.....	fl.oz.	5

FROSTING WINDOWS.

This is a method used by painters: Put a piece of fresh or soft putty in muslin, twist the fabric tight and tie it in the shape of a pad; clean the glass thoroughly at first, then pat it over with the pad. The putty will exude sufficiently through the muslin to render the stain opaque. Let this stain dry hard and then varnish the glass. If a pattern is required, cut it out in paper as a stencil; place it so as not to slip and proceed as above, removing the stencil when finished. If there should be objection to the clear spaces, they may be covered with slightly opaque varnish. Instead of using a pad, some attach the putty to the tips of their fingers.

Finer effects are obtained by the use of matt varnishes, but some skill in their application is required when the glass panes are in position. The proper way to employ is to float the varnish over the surface of the leveled pane and then decant off one corner, exactly as photographic plates are handled. In order to obtain a fine grain without streaks, the operation must be done quickly. Here is a formula for matt varnish:

Ground-Glass (Matt) Varnish.

Mastic	av.oz.	½
Sandarac	av.oz.	2
Benzol	fl.oz.	10
Ether	fl.oz.	20

A solution of guttapercha in chloroform may be used in a similar manner.

FRUIT STAINS, Removal of.

See Stains from Fabrics, Removal of.

FUNGICIDES FOR PLANTS.

The term fungicide signifies an agent to destroy fungi or certain lower forms of parasites. The particular parasites referred to in this connection are such as attack plants, especially fruit trees, for example, blights, rots, smuts, mildew, etc. Some of the preparations mentioned under the heading Insecticides for Plants, may also be used as fungicides.

The formulas and information herein contained are taken from the pamphlet issued by the Department of Agriculture and from other sources of information which may be considered entirely trustworthy.

These fungicides are mostly liquid preparations which are sprayed on the plants. They usually have either copper salts or sulfur as a basis.

Bordeaux Mixture.

This is considered the most valuable fungicide for combating plant diseases. It consists of a mixture of copper sulfate and lime with water. The formula varies somewhat according to the use which is to be made of the spray. What

is called the standard or 6-4-50 formula is as follows:

Copper sulfate.....	av.lb.	6
Fresh lime.....	av.lb.	4
Water, to make.....	gall.	50

Dissolve the copper sulfate in a wooden or earthen vessel, using 4 or 5 gallons of water, which, if hot, will act quicker. In a separate vessel slake the lime and rub until all lumps are broken. Then strain and stir slowly into the copper solution. This is to be diluted and used as soon as possible. The mixture should not stand over 24 hours, as it tends to spoil. Where a good quality of lime is used, 4 pounds will satisfy 6 pounds of copper sulfate.

Four ounces of Paris green may be added to each 50 gallons of this liquid for all except peach and other stone fruits, when a combined insecticide and fungicide for general use is wanted. Its chief disadvantage is its spotting the fruit and its liability to be washed off the foliage by rains. For peach and other stone fruits, use only 2 ounces of Paris green. London purple, arsenate of lead, and other arsenicals may be added in the same manner.

The above standard Bordeaux mixture is frequently slightly modified, a very common modification being this so-called 5-5-50 mixture:

Copper sulfate.....	av.lb.	5
Lime	av.lb.	5
Water, to make.....	gall.	50

This formula is used where it is specially required that there be no excess of the copper salt which will scald the foliage and fruit. For this reason, the 5-5-50 formula is now used for orchard spraying. It has almost replaced standard Bordeaux mixture in spraying for the apple scab, bitter-rot, pear, and cherry leaf blight, and similar diseases.

The form of Bordeaux mixture most harmless to foliage is the 3-9-50, which has a considerable excess of lime. This is also called "peach Bordeaux mixture."

No matter what quantity of Bordeaux

mixture is made, it will require straining, which is best accomplished by means of a wire strainer. If the milk of lime is strained before mixing with the copper solution, subsequent straining will not be necessary.

Various other modifications of the original Bordeaux mixture have been suggested and tried. The principal ones are the "soda Bordeaux mixture" and "potash Bordeaux mixture." The former consists of 6 parts of copper sulfate, 2 pounds of caustic soda, and 50 gallons of water. The latter has the same amount of caustic potash instead of soda. These alkalis take the place of lime to decompose the copper sulfate.

Other substances have been added to Bordeaux mixture to increase its spreading power, especially when the smooth, glossy surface of the fruit and foliage causes the mixture either to collect in drops or run off entirely. Success has been obtained by the use of ordinary hard soap dissolved in hot water and added at the rate of 4 pounds to the barrel of mixture. This is then known as "soap Bordeaux mixture."

Instead of hard soap, a saponaceous mixture prepared as follows is also recommended:

Rosin	av.lb. 5
Potash lye.....	av.lb. 1
Fish oil.....	fl.oz. 16
Water	gall. 5

The potash lye is the kind which is ordinarily sold for washing purposes. Dissolve the rosin with the oil in a large iron kettle. Let this cool somewhat and then add the potash, slowly stirring the mixture at the same time and watching it carefully to avoid boiling over. Then add a portion of the 5 gallons of water and continue boiling until the mixture will dissolve in cold water. This will require about an hour, when the remainder of the water should be added slowly and the whole thoroughly stirred.

Two gallons of this soap mixture should be added to each 50 gallons of Bordeaux mixture and the whole then strained through a brass wire-cloth strainer. Instead of soap, molasses has been recommended to make the mixture more adherent to fruit and foliage in the following:

Copper sulfate.....	av.oz. 6
Fresh lime (or sodium carbonate)	av.lb. $4\frac{1}{2}$
Molasses	fl.oz. 32
Water	gall. 50

Dissolve the copper sulfate in sufficient water, using a non-metallic vessel. Slake the lime or dissolve the soda in 2 gallons of water in a separate vessel. Dilute the molasses with a gallon of water, and stir it into the lime wash or soda solution. After these have been thoroughly mixed add the whole, with vigorous stirring, to the copper solution. The mixture thus produced should be diluted to 50 gallons and used soon as it deteriorates on standing. It is very adhesive to the foliage, and fewer treatments will be required than when the plain Bordeaux mixture is used.

Eau Celeste.

Copper sulfate.....	av.lb. 11
Ammonia water	pints 11
Water	pints 38

Dissolve the copper salt in the water and add the ammonia water.

This is however, generally used in a modified form as follows:

Copper sulfate.....	av.lb. 4
Sodium carbonate.....	av.lb. 5
Ammonia water.....	pints 3
Water	gall. 45

Dissolve the copper sulfate in sufficient water, using a non-metallic vessel. Dissolve the soda in sufficient water in a separate vessel. Mix these two and then add the ammonia and dilute to 45 gallons. This preparation does not keep very well.

This is a very acrid mixture, and in the hands of careless persons may do much damage to the foliage. It should

never be used upon the peach, plum or cherry. It gives best results upon the apple. It does not stain the fruit. Arsenites cannot be safely added to this mixture.

Other Copper Solutions.

Copper sulfate.—

Copper sulfate.....av.lb. 3

Watergall. 50

Dissolve the sulfate in the water.

This solution should never be applied to green foliage. Its proper use is as an early spring wash for the trunk and branches of trees and vines to remove lichens and kill disease spores. 4 or 6 ounces of Paris green may be added to each 50 gallons of the above solution. For stone fruits use only 2 or 3 ounces of Paris green.

Copper acetate.—

Dibasic acetate of copper..av.oz. 6

Watergall. 50

Mix and dissolve.

This is recommended as an application to ripening fruit when it is desired to avoid the staining effect of Bordeaux mixture, though it is inferior to the latter as a fungicide. The injurious effect of this solution is much greater than that of Bordeaux mixture and to such susceptible foliage as that of the peach it should be applied sparingly if at all.

Ammoniacal copper carbonate.—

Copper carbonateav.oz. 5

Ammonia water, concentratedpints 2 to 3

Watergall. 50

Dilute the ammonia water with about 2 gallons of water. Add water to the carbonate to make a thin paste, pour on about half the diluted ammonia and stir vigorously for several minutes, allow the mixture to settle and pour off the clear solution, leaving the undissolved portion of the salt behind. Repeat this operation, using small portions of the remaining diluted ammonia until all the carbonate is dissolved, being careful to use no more ammonia than is necessary to complete solution. Then add the remainder of the water. If

kept well corked, this solution will keep a long time.

This forms a clear, light-blue solution which, upon drying, leaves little or no stain. As a fungicide it is inferior to Bordeaux mixture and should be used only as a substitute for the latter when the stain of Bordeaux mixture upon ornamental and maturing plants is objectionable.

Plants likely to be injured by Bordeaux mixture will be injured still more by this solution. Examples are the peach, plum and cherry. Arsenites should not be added to this solution.

Sometimes 2 pounds ammonium carbonate dissolved in $\frac{1}{2}$ gallon of water is used in place of the diluted ammonia water in the above.

A preparation like this is called "cupram" by the New Jersey Agricultural College Experiment Station.

As copper carbonate when purchased in the market is quite costly it will be more economical to manufacture it from the cheaper sulfate in the following manner.

Copper sulfate.....av.oz. 16

Sodium carbonate.....av.oz. 20

Watersufficient

Dissolve each of the salts separately in a gallon of water, pour the two solutions together, and stir thoroughly. The precipitate may be collected and then dried or it may be used in the moist condition by being dissolved at once in the ammonia water. The above quantities of salts will make about 8 av. ounces of dried copper carbonate.

Corrosive Sublimate Fungicide.

For the treatment of the potato scab a solution of corrosive sublimate has given the best results. This is to be prepared by dissolving $1\frac{1}{2}$ av. ounces of corrosive sublimate in about $1\frac{1}{2}$ gallons of hot water and afterwards adding enough water to make 10 gallons.

FURS, PRESERVING OF.

The following has been suggested for this purpose:

Carbolic acid.....f.dr.	6
Oil of clove.....f.dr.	3
Oil of mibane.....f.dr.	3
Oil of lemon.....m.	30
Alcohol, to make.....f.oz.	32
Mix and dissolve.	

The articles are moderately sprinkled with the fluid. One sprinkling will suffice for the summer, provided they are stored in closed boxes or closets, but goods in storerooms will require to be sprinkled twice.

FURNITURE POLISHES.

These occur in three forms, liquids, cream and paste, which contain some similar constituents, varying mostly in consistency. They act by removing dust and dissolving the exterior oxidized coating of varnish, while the friction renews or restores the polish. It follows therefore that the longer and harder the woodwork is rubbed, the better gloss will be obtained.

Liquids.

These liquid polishes are usually incompatible mixtures, separating into several layers, and require to be well agitated before use.

I.

Linseed oil, raw.....f.oz.	32
Alcohol, denatured.....f.oz.	8
Diluted acetic acid.....f.oz.	8
Oil of turpentine.....f.oz.	8
Solution of antimony chlorid	f.oz. 2

II.

Linseed oil, raw.....f.oz.	40
Diluted acetic acid.....f.oz.	16
Alcohol, denatured.....f.oz.	4
Solution of antimony chlorid	f.oz. 2
Ammonium chlorid.....av.oz.	1
Spirit of camphor.....f.oz.	1

Add first the antimony solution, then the spirit of camphor and acid, and lastly the ammonium chlorid to the oil, and shake well after each addition.

III.

Alcohol, denatured.....f.oz.	10
Linseed oil, raw.....f.oz.	10
Sandarac	dr. 2
Diluted acetic acid.....f.oz.	5
Nitric acid	f.dr. 4

Dissolve the sandarac in the alcohol and add the other ingredients.

IV.

Alcohol	f.oz. 1
Acetic acid, 36%.....f.oz.	2
Oil of turpentine.....f.oz.	4
Linseed oil, boiled.....f.oz.	8

Wood or denatured alcohol may be used in place of ordinary alcohol.

Creams.

V.

Potassium carbonate.....av.oz.	1
Soft or green soap.....av.oz.	2
Yellow wax	av.oz. 8
Water	f.oz. 64

Mix and boil the whole until a uniform cream results.

VI.

Yellow wax.....av.oz.	3½
Potassium carbonate.....gr.	100
Oil of turpentine.....f.dr.	4
Oil of lavender flowers.....m.	80
Water	sufficient

Boil the wax with 16 fluidounces of water over a direct fire, and add to the hot liquid the potassium carbonate. Now remove from the fire, add the two oils, stir until cool, and add enough water to make 32 fluidounces.

In using this cream, apply lightly on a woolen cloth, and then rub with a piece of linen until the furniture has acquired a polish.

Pastes.

VII.

Yellow wax.....av.oz.	4
Alkanet, coarse powder.....av.oz.	½
Oil of turpentine.....f.oz.	16

Macerate the alkanet in the oil for 24 hours, strain and add the colature to the wax previously melted. The alkanet may be omitted, if desired.

VIII.

Venice turpentine.....av.oz.	6
Linseed oil.....f.oz.	16

Mix by the aid of heat. The mixture may be colored like the preceding by means of alkanet root.

IX.

Paraffin wax.....av.oz.	7
Petrolatum, yellow	av.oz. 5
Solution of potassa, 5%.....f.dr.	5
Kerosene	f.oz. 20
Alkanet	av.oz. 2

Heat the potassa with the paraffin and petrolatum, add the alkanet root,

digest until the liquid is colored sufficiently, strain through cloth, and stir in the kerosene while cooling.

GASOLINE JELLY OR CREAM. (Solidified Gasoline.)

This is the same as Benzin Jelly, but substituting gasoline for the benzine.

GELATINIZED BENZIN.

See Benzin Jelly.

GLASS, MIRRORS, Etc., Polish for.

See Window Polishes.

GLOVE CLEANERS.

For other cleaning preparations, see under headings Benzin Jelly; Cleansing Preparations; and Soap, Ox-Gall.

These preparations may be in the form of liquids, pastes, or powders.

Liquids.

Use any of the preparations mentioned under Cleansing Liquids, which see, or the following:

I.

Oil of turpentine.....	fl.oz. 5
Benzol	fl.oz. 10

II.

Chloroform	fl.oz. 1
Oil of bergamot.....	fl.dr. 1
Oil of bitter almond.....	drops 5
Oil of clove.....	drops 5
Gasoline, to make.....	fl.oz. 32

This is to be applied with a sponge or soft cloth. Do not use it near any lights or fires or at night.

Pastes.

III.

Solution of chlorinated soda	fl.oz. 10
Ammonia water.....	fl.oz. 1
Soap, powder.....	av.oz. 12
Water	fl.oz. 16

Make into a soft paste, and rub on the gloves with a flannel.

IX.

Castile soap, shavings.....	av.oz. 5
Water, hot.....	fl.oz. 5
Solution of chlorinated soda	fl.oz. 5
Ammonia water.....	fl.dr. 4

Dissolve the soap in the water, allow to cool, and incorporate with the solution and ammonia so as to form a smooth paste.

In using, rub a small portion over the glove by means of a piece of flannel, always rubbing in one direction until clean.

V.

Castile soap.....	av.oz. 8
Borax	av.oz. 1
Caustic potash.....	av.oz. 1
Glycerin	fl.oz. 1
Alcohol	fl.oz. 2
Water	fl.oz. 42
Oil of mirbane or other essential oil	drops 20

Dissolve the borax in 40 fluidounces of water and bring to a boil; during boiling, add the soap, in shavings, and when dissolved add enough water to make up for that lost by evaporation. Dissolve the caustic potash in the remainder of the water, add this solution, the glycerin, and the oil dissolved in the alcohol to the soap solution, stirring thoroughly. This mixture may be dispensed in tin boxes as a white paste.

VI.

Curd (tallow) soap.....	av.oz. 4
Saponin	dr. 4
Oil of lemon.....	fl.dr. 2
Water	fl.oz. 16
Talcum	sufficient

Dissolve the soap, previously shredded, in the water by the aid of heat, then add the saponin and oil and enough talcum to make a stiff paste. A portion of the talcum may be replaced by orris root. If the saponin is considered too expensive, it and the water may be replaced by a strong decoction of soap bark.

The directions for use are: Put the glove upon the hand and apply the paste with a piece of flannel, rubbing the kid from the wrist to the tips of the fingers.

Powders.

VII.

White bole (terra alba).....	parts 5
Magnesium carbonate.....	part 1

When using, make into a paste with gasoline, apply this to the stains of fat or oil, allow to remain until dry, and then remove with a brush.

VIII.

Terra alba	av.oz. 8
Orris root, powder.....	av.oz. 4
Borax, powder.....	av.oz. 2
Soap, powder.....	av.oz. 1
Ammonium chlorid.....	dr. 2

Mix thoroughly. The directions for use are to dampen the gloves with a wet rag, dust on the powder and then rub it well in. When dry, brush off the residual powder.

GLUE, BOOKBINDER'S OR TABLET.

Glue, best.....	av.oz. 7
Glycerin	fl.oz. 16
Water	sufficient

Pour on the glue more than enough water to cover, allow to macerate for several hours, then decant the greater portion of water; apply heat until the glue is dissolved, and add the glycerin. If the mixture is too thick, more water may be added. It may be colored by means of an aniline dye dissolved in alcohol.

Any of the preparations mentioned under Glues, Liquid, may also be used.

GLUE, LIQUID. (Prepared Glue—Syndetikon.)

The making of so-called 'liquid glue' depends on the fact that when gelatin or glue is mixed with certain substances in the presence of water, the mixture remains permanently semi-liquid. The most common agents used in this liquefying process are acetic and nitric acids, lime, chloral hydrate, alkalies, and other substances also being used.

The cheaper kinds are made from glue, the handsomer looking preparations from gelatin, but the former probably possess the greater adhesiveness.

These preparations are best dispensed in wide-mouth bottles which are to be kept well-closed when not in use as they will become dry and hard on exposure.

I.

Glue, brown	av.oz. 16
Sodium carbonate.....	av.oz. 5½
Water	fl.oz. 28
Oil of clove.....	m. 80

Dissolve the sodium carbonate in the water and add the glue to this solution, allow to stand over night or until the glue has become thoroughly soaked and swollen, then heat carefully on a water-bath, stirring frequently, until the glue is entirely liquefied, and finally add the oil of clove.

The sodium carbonate may be the commercial variety; the solution in water should then be strained to remove mechanical impurities.

White glue may be used instead of the brown but the latter makes the more adhesive glue.

The objection to this formula is that in the course of time the alkali will destroy the adhesiveness of the glue.

II.

Glue	av.oz. 10
Nitric acid, ordinary.....	av.oz. 2
Water, to make.....	fl.oz. 20

Soak the glue in 10 fluidounces of water for about 12 hours, then heat carefully on a water-bath, stirring frequently meanwhile, and while cooling, gradually incorporate the acid and the remainder of the water.

III.

Glue, white or brown.....	av.oz. 7
Acetic acid.....	fl.oz. 7
Carbolic acid.....	drops 10
Water, to make.....	fl.oz. 20

Soak the glue in 8 ounces of water for 12 hours, then heat by means of water bath until the glue is dissolved, and add to the solution the acids and enough water to make 20 fluidounces.

IV.

Glue, brown	av.oz. 16
Water	fl.oz. 24
Carbolic acid, strong.....	fl.oz. 1

Warm the glue with the water on a water bath till dissolved then add the acid, and as much more water as may be necessary to give the proper consistency.

V.

Glue	av.oz. 6
Alum	dr. 1
Acetic acid.....	fl.oz. 1

Alcoholfl.oz. 3
Waterfl.oz. 13

Dissolve the alum in the water, add the glue, macerate the latter till it is softened, then heat carefully on a water bath until the glue is liquefied, allow the mixture to cool somewhat, and then incorporate the acid and alcohol.

GLUE, MARINE

Macerate 1 to 2 av. ounces of caoutchouc cut into small pieces in 16 fluid-ounces of benzol (not benzin), promoting solution by the application of heat and by agitation. To the solution when formed, and which will have the consistence of thick cream, add 30 av. ounces of powdered shellac, heat the mixture with constant stirring until complete fusion and combination have been effected. Pour this mixture while hot on plates of metal, so that it may cool in sheets like leather.

In using this cement, put some of it into an iron vessel, heat to 120° C., and apply with a brush to the surfaces to be joined.

GLUE, STICK. (Pocket Glue—Elastic Glue—Mouth Glue—Lip Glue.)

See Mucilage, Stick or Bar.

GLUE, WATERPROOF.

I.

India rubberav.oz. ½
Shellac, orangeav.oz. 3
Benzol or carbon disulfid...fl.oz. 8

Mix and dissolve by agitation.

This makes a waterproof joint.

II. A waterproof joint may also be made in this wise:

Glueav.oz. 5
Waterfl.oz. 4½
Acetic acidfl.oz. 1
Ammonium bichromatedr. 1½

Soak the glue in 4 fluidounces of water till soft, then heat on a water-bath till dissolved, incorporate the acetic acid, transfer the solution to a dark amber-colored bottle, and then add the bichromate dissolved in the remainder of the water.

If an amber bottle is not on hand,

the mixture may be kept in an ordinary bottle in a very dark place.

In using, apply the glue to the broken ends, fasten the parts together securely, and expose to strong light which makes the glue insoluble.

See also under Cements.

GOLD, TARNISHED, To Restore.

This mixture has been recommended for this purpose:

Chlorinated limedr. 2
Common saltdr. 2
Sodium bicarbonateav.oz. 5
Waterfl.oz. 4

Mix well and apply with a soft brush.

Only a small quantity is required to effect the purpose. Plain articles may be brightened equal to new by applying a drop of the liquid from the stopper of the bottle and brushing over the surface with tissue paper.

GOLDWARE, To Clean.

See under Gold, Tarnished, To Restore, and Polishing Powders, or use one of the following:

For Goldware.

Acetic acidm. 80
Sulfuric acidm. 80
Oxalic acidgr. 40
Jewelers' rougegr. 80
Distilled waterfl.oz. 16

Mix the acids and water and stir in the rouge, after first rubbing it up with a portion of the liquid. With a clean cloth, wet with this mixture, go well over the article. Rinse off with hot water and dry.

Gilt Bronze Ware.

If greasy, wash carefully in suds, or, better, dip into a hot solution of caustic potash, and then wash in suds with a soft rag, and rinse in running water. If not then clean and bright, dip into the following mixture:

Nitric acidfl.oz. 3
Aluminum sulfatedr. 2½
Waterfl.oz. 12

Then rinse in running water.

GRAFTING WAX. (Budding Wax.)

I.

Rosinav.oz. 16

Beef tallow	av.oz.	1
Oil of turpentine.....	f.dr.	4
Alcohol	fl.oz.	5

Melt the rosin, add the tallow, stir until homogeneous, remove from the fire, allow to cool somewhat, and add the oil and alcohol, little by little, stirring well with each addition. If in adding the alcohol there is a tendency to lump, carefully warm the mixture until it melts.

It should be kept in closely stoppered bottles, and when used it should be warmed up slightly. Apply with a brush. A very thin coat only is needed.

GREASE ERADICATORS.

See under the headings Ammonia, Household; Carpet Cleaners; Cleansing Preparations; Benzin Jelly; Glove Cleaners; Soap, Ox-Gall; and Stains from Fabrics, Removal of.

GREASY BOTTLES, TO CLEAN.

See Bottles, Cleaning of Greasy.

GREASE-PROOF BOXES.

The following is the composition of the preparation used for painting the interior of cardboard or wooden boxes to make them grease-proof:

Fish glue	av.oz.	16
Resin	av.oz.	2
Litharge	av.oz.	$\frac{1}{2}$
Glycerin	fl.oz.	$\frac{1}{2}$
Kaolin	av.oz.	$\frac{1}{2}$
Water	fl.oz.	40

Boil the glycerin, litharge and part of the water together to dissolve, then mix in the other ingredients. The liquid is applied to the inside of the boxes with a brush and allowed to dry, repeating the application if necessary.

GRENADES for Extinguishing Fires.

See Fire Extinguishing Hand Grenades.

GROUND GLASS, Imitation of.

A paint for imitating ground glass may be made by rubbing down zinc oxid with linseed oil to a thick cream. Then apply thinly, stippling with a stiff brush.

Sugar of lead, ground fine in bleached linseed oil, with a little varnish, well mixed and put on with a stiff brush, will give an imitation that is good enough for many purposes.

GUANO, Artificial.

Sodium sulfate, dried.....	av.lb.	1 $\frac{1}{2}$
Common salt	av.lb.	12
Wood ashes	av.lb.	4
Ammonium sulfate, com-		
mon	av.lb.	16
Bone dust	bushel	1

GUN BARRELS, Staining of.

See Bluing of Gun Barrels, Bronzing of Gun Barrels, and Browning of Gun Barrels.

GUTTA PERCHA, Purified.

Gutta percha	av.oz.	8
Carbon disulfid	fl.oz.	38
Alcohol	fl.oz.	108
Distilled water	fl.oz.	20

Soften the gutta percha in lukewarm water; then pull to pieces, dissolve it in the carbon disulfid, set the mixture aside for 24 hours, filter through glass wool into a suitable vessel containing 60 fluidounces of alcohol. Agitate the whole together, and set aside until the mixture separates into two layers. Decant the upper alcoholic layer, wash the residue with the remainder of the alcohol in the same manner, decant as before; add the water, transfer the mixture to a retort, and distil off the carbon disulfid. Owing to the inflammability of the latter, the utmost precaution must be taken to avoid ignition of its vapors. Finally, wash the residual mass by kneading in water, then express the latter, and dry in thin sticks.

The product weighs about 5 to 6 $\frac{1}{2}$ av. ounces.

Chloroform may be used in place of carbon disulfid, but 80 fluidounces will be required. The chloroformic solution will mix with the alcohol and the latter will not separate until the addition of water.

HAND GRANADES.

See Fire Extinguishing Hand Grenades.

HANDS, To Remove Stains From.

See Stains from the Hands, To Remove.

HARNESS BLACKING AND POLISH.

The preparations mentioned under Shoe Blacking will serve for blackening and polishing harness, or use one of the following:

I.

Lampblack	av.oz.	1/4
Bone black	av.oz.	1 1/4
Yellow wax	av.oz.	6
Oil of turpentine.....	fl.oz.	60

Beat the two blacks with about an ounce of the oil to make a smooth paste; also melt the wax at a gentle heat, add the remainder of the oil, and then incorporate the previously prepared paste.—H.

II.

Shellac, bleached	av.oz.	4
Borax	av.oz.	2
Sugar	av.oz.	4
Nigrosin	av.oz.	1
Water	fl.oz.	27

Heat the borax and shellac with the water on a water bath until the shellac is dissolved, adding water from time to time to replace that lost by evaporation; then add the sugar and nigrosin, stir until dissolved, and then add enough water to make 40 fluidounces.—D.

In using the harness or other leather goods should be thoroughly cleaned by washing with soap and water, allowed to dry, and then coated with this dressing by means of a brush or sponge.

HARNESS DRESSING OR OIL.

See also the similar preparations under the heading Shoe Grease.

If these preparations are intended for yellow (not blackened) leather, the lampblack is to be omitted.

I. This has been called

Government Harness Dressing.

Bayberry wax	av.lb.	1
Yellow wax	av.lb.	1
Beef tallow	av.lb.	1
Castor oil	pint	1
Neatsfoot oil	pints	4
Lampblack	av.oz.	1/2

Melt the two waxes together, add the oils, and incorporate the lampblack.

II.

Neatsfoot oil	fl.oz.	20
Oil of turpentine.....	fl.oz.	4
Petrolatum	av.oz.	8
Lampblack	av.oz.	1

Make a smooth mixture of the lampblack with the oil of turpentine, melt the petrolatum, add the neatsfoot oil, and shake with the first mixture.

HARNESS-MAKER'S WAX.

See Shoe and Harness Makers' Wax.

HARNESS VARNISH or Lacquer.**I.**

Shellac	av.oz.	2
Sandarac	av.oz.	1/2
Mastic	dr.	2
Venice turpentine	av.oz.	1 1/2
Alcohol or wood alcohol...	fl.oz.	24
Aniline black	dr.	2

Mix, dissolve by agitation, and strain.

More aniline black may be added if a darker shade is desired.

II.

Shellac	av.oz.	6
Gum turpentine	av.oz.	6
Venice turpentine	av.oz.	1
Sweet oil	fl.oz.	1
Lampblack	av.oz.	1
Alcohol or wood alcohol...	fl.oz.	32

Dissolve the first three ingredients in the alcohol by agitation, strain, and add the lampblack previously rubbed to a perfectly smooth paste with the oil.

This mixture is to be well shaken before using.

III.

Rosin	av.oz.	1
Thick turpentine ..	av.oz.	1
Sandarac	av.oz.	2
Shellac	av.oz.	4
Oil of turpentine.....	fl.oz.	1
Alcohol or wood alcohol...	fl.oz.	36
Lampblack	av.oz.	1

Mix all but the lampblack and oil, agitate frequently until dissolved, rub the lampblack to a smooth mixture with the oil, and incorporate with the alcoholic solution.

HATS, To Clean.

See under Panama Hats, To Clean, and Straw Hat Cleaners.

HEEL BALL.

This is described as the best formula:

Beeswax	av.oz. 16
Suet	av.oz. 4
Ivory black	av.oz. 4
Lampblack	av.oz. 2
Gum arabic	av.oz. 2
Rock candy	av.oz. 2

The gum arabic and rock candy should be in very fine powder. Melt the wax and suet, stir in the finely powdered ivory black, sifted lampblack, and the rock candy and gum arabic, mix the whole thoroughly, allow to cool somewhat, and pour into tin or leaden molds.

HECTOGRAPH MASSES OR PADS.

Hectographs, also known as copying pads, copygrams, copygraphs, chromographs, collographs, etc., are employed for the purpose of duplicating writing by taking an impression of writing made with a suitable aniline ink on a receiving pad made essentially from gelatin or glue and glycerin and then obtaining copies by laying fresh sheets of paper upon the pad.

The following formula will make a good pad. The directions with regard to air bubbles, pouring of the mass, etc., must be followed strictly in the succeeding formulas:

Take a pound, or any convenient quantity of pure white glue, free from whiting or other insoluble matter, and macerate in water, until it becomes soft and pliable. With a little manipulation and turning, this may be accomplished by using a pint of water for each pound of glue. Drain off the excess of water, if there be any, and add glycerin in the quantity of from two to three pints for each pound of glue used. The lesser amount is for summer, and the larger amount for winter use. Heat the mixture gently until the glue is dissolved, and the water absorbed by the glue has evaporated. The easiest way of ascertaining when this is accomplished is to take the weight of the evaporating dish out before commencing; then when the weight of the dish and its contents is

equal to its tare and the amounts of glue and glycerin used, the operation may be considered completed. If the water is not driven off, the pad is likely to crack in a dry atmosphere by its spontaneous evaporation.

It will be found somewhat troublesome to avoid air bubbles in the mass. They may be avoided to an extent by the use of only moderate heat in dissolving the glue. When bubbles have formed, they may be skimmed off, but it is easier to destroy them by the use of alcohol. The mass when finished is strained into a wide mouthed bottle and allowed to stand in a warm place, or in warm water for an hour or two, when most of the bubbles will have arisen to the top and formed a scum on the surface. A small quantity of alcohol is now poured carefully down the side of the bottle, which instantly destroys them all. The gelatin, which is precipitated by the alcohol on the surface, redissolves as the alcohol evaporates. When this has occurred, the mass may be poured into a suitable shallow tray, holding the mouth of the bottle as near the tray as possible, to avoid the formation of fresh bubbles. The tray may be made by any tinmer and should be as large as the largest paper on which copies are to be taken. It should be about $\frac{1}{2}$ inch deep. To secure firmness, it should be fastened to a board. The melted mass may now be poured, as described, to nearly fill the tray; any air bubble which forms must be removed with a hot wire or other suitable means, and when cold the pad or hectograph is ready for use.

It is difficult to obtain a pad absolutely free from bubbles and one which is not sticky. To avoid the latter, various insoluble powders, sometimes soluble salts, are added to the hectograph mass. The former include clay, chalk, sulfur, barium sulfate, etc.; the latter potassium and other chromates. The former must be rubbed to a smooth paste with a por-

tion of the melted mass before adding to the remainder of the mass; the latter must be dissolved in the smallest amount of water before adding to the remainder of the mixture.

The *modus operandi* of taking copies is as follows:

Write upon well-glazed paper with a suitable ink, using a new, broad-pointed pen, allow it to remain for a minute or so to dry partially, then invert carefully upon the pad and press evenly and uniformly. In a minute or two sufficient ink will have been absorbed by the pad from the paper so that new sheets of paper (not so well glazed), pressed upon the pad, will receive duplicates of the original writing. The number of copies that may be taken in this way, as well as their distinctness, varies according to the pad and the ink. The original writing, if laid upon a fresh pad or a fresh portion of the same pad after taking the first imprint, will furnish still other copies. After all the copies are taken, the pad should be cleansed with a moist sponge, after which it should be dried. A trifling amount of ink will remain in the pad, but this will not interfere with subsequent operations. The copies are sometimes improved by moistening the copying paper with water or strong alcohol, and then absorbing the excess of liquid between folds of bibulous paper.

Hectograph inks are mentioned under heading Inks.

The hectograph mass, instead of being poured into a tray, may be formed into a roller by casting in a mold. Copies may be taken by passing the roller over the writing and then over the paper to receive the copies.

The following mixtures may be formed into hectograph pads, as described above:

I.	
Gelatin	av.oz. 4
Glycerin	fl.oz. 30
Potassium bichromate	dr. 1

II.	
Gelatin	av.oz. 4
Water	fl.oz. 15
Glycerin	fl.oz. 15
White clay (kaolin).....	av.oz. 2

III.	
Gelatin	av.oz. 1
Molasses	av.oz. 1
Glycerin	fl.oz. 9
Water	sufficient

IV.	
Glue	av.oz. 7
Glycerin	fl.oz. 30
Carbolic acid	fl.dr. 4
Sulfur	dr. 1

The glue should be soaked in water several hours before it is melted with the glycerin. Barium sulfate is also used as an addition.

V.	
White glue	av.oz. 6
Glycerin	fl.oz. 32
Dextrin	av.oz. 2
Precipitated sulfur	av.oz. $\frac{1}{2}$
Water	sufficient

VI. The following is said to be the formula of the French Ministry of Public Works:

Glue	av.oz. 4
Glycerin	av.oz. 20
Water	fl.oz. 15
Kaolin or barium sulfate, in fine powder	av.oz. 1

Soak the glue in the water until it takes up as much moisture as it will absorb. Drain and press out the surplus and place the container with the glue in a water bath. Heat until solution takes place. In the meantime mix the barium sulfate or kaolin with the glycerin and add to the hot solution of glue. Maintain the heat for a few hours, in order to drive off the excess of water, and pour the mixture into a shallow tin or zinc tray.

HECTOGRAPH SHEETS.

A variation of the hectograph pads are the sheets prepared as follows: Macerate 4 parts of good white glue in a mixture of 5 parts of water and 3 parts of ammonia water until the glue is soft. Warm the mixture until the

glue is dissolved, add 3 parts of granulated sugar and 8 of glycerin, stir well, and let the mixture come to a boil. While hot, paint the liquid upon white blotting paper with a broad brush until the paper is thoroughly soaked and a thin coating remains upon the surface. Allow it to dry for 2 or 3 days, and it is then ready for use. Use the regular hectograph ink for writing and before transferring the latter to the blotting paper, wet the latter with a dampened sponge and wait a minute or two before using. Then proceed to make copies in the ordinary way. If the sheets are laid aside for 2 or 3 days, the writing sinks in and does not require to be washed off.

HORN AND IVORY, To Color Black.

First place the horn in an aqueous solution of a lead salt, with a slight excess of sodium hydrate. The duration of this treatment depends on the character of the horn and the strength of the solution—generally half an hour is sufficient. Then wash well and introduce the horn into a solution of 350 grains of wool black and 18 grains of naphthol yellow S in 1 pint of water at 40° C. A longer subjection to this latter treatment appears to be necessary.

For bone and ivory, water-soluble nigrosin will answer. It is only necessary to lay the pieces, previously deprived of fat and mordanted, in a hot aqueous solution of nigrosin until the desired tone is obtained. On account of its cartilaginous components, ivory cannot be boiled in the nigrosin solution, but the same result can be obtained by allowing it to stand for some hours in a concentrated solution at a temperature of about 30° C.

To deprive the bones of fat before treatment with aniline colors it is sufficient to boil them with frequent changes of water, subsequent treatment with ether being unnecessary.

Kellermann's method of mordanting is especially recommended. This con-

sists of placing the defatted bones for 15 minutes in the following:

Nitric acid	fl.oz. 1
Water	fl.oz. 21
Tartaric acid	dr. 2

They are then washed and placed in a solution of 7 grains of zinc chlorid in 1 pint of water with a few drops of hydrochloric acid.

With ivory it is sufficient to mordant for 15 minutes in 1% hydrochloric acid.

HYDROGRAPHIC PAPER.

I. Black:

Nutgall, very fine powder.....	dr. 4
Ferrous sulfate, dried, very fine powder	dr. 1

Rub this mixture over the surface of paper with pressure, brushing off the loose portions.

This writes black with a pen dipped in water.

II. Blue (No. 1):

Monse's salt, very fine powder.....	dr. 1
Potassium ferrocyanide	dr. 2

Prepare the paper as in the preceding.

This writes blue with water.

III. Blue (No. 2):

Wet paper with a weak (colorless) solution of potassium ferrocyanide and dry. Write upon it with a colorless solution of Monse's salt or a very dilute solution of iron subsulfate. It writes blue.

IV. Reddish brown:

Copper sulfate, very fine powder	dr. 1
Prussian blue, very fine powder	dr. 2

Proceed as in I and II. It writes reddish brown with water.

HYPODERMIC SYRINGES, To Clean.

The following is from a medical authority: If the wire cannot be passed through the canal, hold the needle for a moment over a flame, the foreign substances being rapidly destroyed and driven off, then pass the wire through. If a wire has been rusted into the needle, the latter should be dipped in oil before holding over the flame. To re-

move rust from the interior of the canula, oil should be passed through the latter, then heating as before. Finally rinse out the needle with alcohol.

INCENSE. (Balsamic Fumigation.)

I.

Benzoin	av.oz.	2
Olibanum	av.oz.	3
Myrrh	av.oz.	3
Cascarilla	av.oz.	1½
Oil of lavender flowers....	drops	5
Oil of bergamot.....	drops	10
Oil of clove.....	drops	5
Oil of cinnamon.....	drops	4

II.

Olibanum	av.oz.	7
Benzoin	av.oz.	2
Cascarilla	av.oz.	1

INKS, Manufacture of.

The characteristics of a good writing ink are as follows:

1. It must flow easily from the pen, but not drop from it nor spread on the paper.

2. It should not contain finely suspended matter which will subside in the course of time, but should be perfect solution.

3. The color should be dark, and therefore practically saturated, and writing made with it should not fade.

4. It should not mold, nor be liable to other decomposition.

5. It should copy or it should not, as may be desired, and,

6. It should not appreciably attack or corrode steel pens.

Black writing inks are frequently classed according to their use, as follows:

1. Office or document inks, which must be prepared from nutgall or tannin, should be permanent, and are intended for documents which are to be preserved.

2. Copying inks, which are prepared from nutgall, tannin, logwood, or even coal tar dyes, and which must furnish good copies, and

3. Ordinary writing inks, such as are employed as house and school inks, and which should be cheap and from which no special permanence is expected.

According to composition, inks may be classified into

1. Aniline inks.
2. Logwood inks.
3. Nutgall inks.
4. Tannin inks, and
5. Miscellaneous inks.

The first class yields copying and writing inks, as well as the various colored inks which are in use for various purposes. The second class yields copying and writing inks, and the third and fourth classes yield document and copying inks. The fifth class embraces hectograph inks, indelible inks, sympathetic inks, etc.

Formerly it was customary to add acetic acid and acetates, oxalic acid and oxalates, nitric acid and nitrates, tartrates, sodium chlorid, ammonium chlorid, potassium chlorate, copper sulfate or acetate, alum, or even logwood to nutgall inks, but these not only serve no good purpose but are even harmful.

In order that a good ink may retain its excellent qualities, certain cautions should be observed in its use: Before putting a new ink in an ink-well, the old ink should be entirely removed and the ink-well washed. Also no ink container should be used which cannot be closed, and such ink vessel should always be closed when not in use. If an ink is liable to thickening or other change, the ink-well should be cleansed before refilling, even if with the same ink.

Several preparations, which are used in the manufacture of many of the inks which follow, are mentioned here.

Nutgall infusion:

Chinese nutgall	av.oz.	6½
Talcum, purified	av.oz.	¾
Water, distilled	sufficient	

Reduce the nutgall to coarse powder, moisten (not wet) the powder, and set the latter aside at a temperature of 20 to 25° C. until it is thickly covered with mold. In order to hasten this molding, the drug should be moistened daily with water, so that it will always have about the same proportion of moisture. At

the end of from 8 to 10 days, fermentation will have advanced sufficiently to admit of extraction of the drug. To the latter should be added 13 fluidounces of water, and the mixture heated for an hour on the water-bath. Then express, treat the residue in the same manner with the same amount of water, and then again with 7 fluidounces of water. Mix the three liquids obtained, add the talcum, shake well, set aside for 24 hours, filter, and add enough water, if necessary, through the filter to make the filtrate measure 32 fluidounces.

The solution will keep for several days.

The fermentation causes the conversion of a portion of the tannin in the galls into gallic acid, which results in an ink superior to one containing tannin only.

Chinese galls are preferred to oak galls because of the larger amount of extractive matter.

Tannin solution:

Tannic acidav.oz. 3
Muriatic acid, commercial...fl.dr. 4
Distilled watersufficient

Mix the two acids and 3 fluidounces of water in a flask, and heat on a water bath to a temperature of 80 to 90° C. for 3 hours, adding from time to time hot water until 27 fluidounces are added.

This solution should not be kept longer than 7 days.

Aniline Inks.—Many of the coal-tar dyes (misnamed "anilines") which are now manufactured, produce excellent copying inks. Compared to nutgall, tannin, and logwood inks, they are less permanent, but they will serve excellently where no especial permanence is required. They are especially useful as hectograph inks. Where permanence of writing is demanded, as in the draughting of documents, aniline inks cannot be employed, as they soon become bleached from the action of air and light.

It is to be noted here that water containing lime decomposes many aniline colors, and solutions of these dyes in

calcareous water may thicken in the course of time, hence only distilled water should be employed in the manufacture of these inks.

In making, only the best obtainable dye of the kind mentioned should be used, as otherwise good results cannot be obtained.

Logwood Inks.—These might also be designated as chrome inks, for they always contain potassium bichromate or chrome alum; also some acid, with the object of producing acid salts of the chromium compound. The greater the amount of acid in proportion to the chromium, the paler or redder and thinner the product, and, conversely, the greater the proportion of chromium, the darker and thicker the ink will be. Most logwood inks copy with great facility—writing produced sometimes being copyable even after weeks and months.

Logwood inks can be more easily erased from paper than nutgall inks. They have the advantage of furnishing several copies if desired. All inks lose their copying qualities when exposed to air containing even traces of ammonia. In order to facilitate copying with an exposed logwood ink, the copying paper should be moistened with a 1/10% aqueous solution of potassium chromate. Old writing made with logwood ink may be copied in the same manner, even after the lapse of years.

Logwood inks may be prepared from the following solution:

Logwood extract solution:

Logwood extract, best....av.oz. 4½
Distilled waterfl.oz. 20

Dissolve the extract in the water on a water-bath, set the solution aside for 8 days, and decant the clear liquid.

Nutgall Copying Inks.—Copying inks differ from non-copying in that they retain their copying qualities. Inks which are made with ferric salts soon become non-copyable, while those made with ferrous salts, especially ferrous sulfate, copy the best. Hence copying inks are made with ferrous salts, and non-copy-

ing inks with ferric salts. The copying qualities of ink are improved by the addition of pure sugar or of glucose.

In preparing the different nutgall copying inks, the following mixture, which may be known as Nutgall Ink Body I, forms the basic ingredient:

Nutgall Ink Body I:

Nutgall infusion (see

above)fl.oz. 30

Sulfuric acid, concentrated....m. 40

Ferrous sulfate, pure.....av.oz. 2

Distilled watersufficient

Mix the infusion and acid; heat for 15 minutes on a water bath, dissolve the iron salt in the mixture, transfer the latter to a bottle, cork well, set aside for 2 weeks, filter and add through the filter enough water to make the filtrate measure 32 fluidounces.

Nutgall Non-Copying Inks.—The following mixture, known in these pages as Nutgall Ink Body II, serves as a body for many of the inks mentioned below:

Nutgall Ink Body II:

Nutgall infusion (see

above)fl.oz. 32

Solution of chlorid of iron,

U. S. P.....fl.oz. 2½

All on this mixture to stand for 2 weeks in a closed vessel, and then filter.

Tannin Copying Inks.—Tannin copying inks, like the nutgall copying inks, are preferably made with ferrous salts and contain an addition of sugar or glucose. The following mixture, which may be known as "tannin ink body I," is the basic ingredient of the tannin copying inks:

Tannin Ink Body I:

Tannin solutionfl.oz. 15

Ferrous sulfate, pure.....av.oz. 1¼

Distilled watersufficient

Heat the tannin solution to about 70 or 80° C., also dissolve the iron salt in 9 fluidounces of hot water; mix the hot solutions by pouring iron solution gradually into the tannin solution, set the mixture aside for 3 weeks, filter and add enough water through the filter to make the filtrate measure 25 fluidounces.

Tannin Non-Copying Inks.—The tannin inks herein mentioned are frequently prepared by the use of the following mixture, which may conveniently be termed "tannin ink body II":

Tannin Ink Body II:

Tannic acidav.oz. 3½

Solution of iron chlorid,

U. S. P.....fl.oz. 5

Muriatic acid, commercial...fl.dr. 2

Watersufficient

Heat the two acids, the solution and 3½ fluidounces of water in a flask on a water-bath, to a temperature of 80 to 90° C., for a period of 10 hours. Then add 20 fluidounces of hot water; continue the heat for another hour, transfer to a bottle, cork well, set aside in a cool place for 2 weeks, filter and add through the filter enough water to make the filtrate measure 32 fluidounces.

Alizarin Ink.

Alizarin pastegr. 225

Sodium carbonate, pure....gr. 105

Extract of logwood.....gr. 375

Carbolic acidfl.dr. 2

Waterfl.oz. 32

Dissolve the sodium carbonate in a small amount of water, add the alizarin paste, then the extract of logwood previously dissolved, in the remainder of the water. Filter and transfer the liquor to a rather large bottle, drop in a few nails or iron filings, and expose the whole to the sunlight for a week, with occasional agitation. Lastly, decant and preserve by incorporating the carbolic acid.

This ink does not corrode the pen, is not affected by light, and does not gum, but it is not acid proof.

Alizarin Ink (Copying).

I.

Indigotindr. 1½

Aniline green D.....dr. 1

Sugarav.oz. 1¼

Distilled waterfl.oz. 3

Nutgall ink body I.....fl.oz. 32

Carbolic aciddrops 20

Dissolve the dyes and sugar in the water by the aid of heat, add the remaining ingredients, transfer the mixture to a bottle; tie over the latter a

piece of paper, set aside in a cool place for a week, and decant the clear liquid from the trifling precipitate.

II.

Indigotin	gr. 70
Aniline green D.....	gr. 40
Glucose	av.oz. $1\frac{1}{4}$
Distilled water	fl.oz. 2
Tannin ink body I.....	fl.oz. 25
Carbolic acid	drops 15

Dissolve the dyes and glucose in the water by the aid of heat, add the remaining ingredients, transfer to a bottle; tie over the latter a piece of paper, set aside in a cool place for one week, and decant the clear liquid from the trifling precipitate.

Alizarin Ink (Non-Copying).

I.

Aniline green D.....	gr. 75
Indigotin	dr. 2
Water	fl.oz. 28
Nutgall ink body II.....	fl.oz. 38
Carbolic acid	m. 30

Dissolve the two dyes in the water by the aid of heat, add the other ingredients, transfer the mixture to a bottle, tie over the mouth of the latter a piece of paper, set aside for one week in a cool place, and decant the clear liquid from the trifling sediment.

II.

Indigotin	gr. 80
Aniline green D.....	gr. 50
Tannin ink body II.....	fl.oz. 16
Distilled water	fl.oz. 25
Carbolic acid	drops 20
Sugar	gr. 40

Dissolve the dyes in the water by the aid of heat, add the other ingredients, transfer to a bottle, tie over the latter a piece of paper, set aside for one week in a cool place, and decant the clear liquid from the trifling precipitate.

Black Ink (Copying).

I.

Phenol black B (coal-tar dye)	dr. 3
Sugar	av.oz. $1\frac{1}{4}$
Distilled water	fl.oz. 3
Nutgall ink body I.....	fl.oz. 32
Carbolic acid	drops 20

Prepare like alizarin copying ink No. I.

II.

Phenol black B (coal-tar dye)	dr. $2\frac{1}{2}$
Glucose	av.oz. $1\frac{1}{4}$
Distilled water	fl.oz. 2
Tannin ink body I.....	fl.oz. 25
Carbolic acid	drops 15

Prepare like alizarin copying ink No. II.

III.

Aleppo galls (free from insect perforations).....	av.oz. $5\frac{1}{2}$
Clove	dr. 1
Distilled water	fl.oz. 40
Ferrous sulfate, pure.....	dr. 12
Sulfuric acid, pure.....	m. 35
Neutral sulfate of indigo.....	dr. 2

The galls and cloves, coarsely ground, may be extracted by percolation with water until 40 fluidounces are obtained, or they may be macerated with sufficient water. In either case it is intended to produce 40 fluidounces of the fluid, and allowance must be made for the water absorbed by the marc. To this, when filtered, add the iron, and when dissolved filter again, then add the acid and, after mixing thoroughly, the indigo paste, after which it may be again filtered.

If the ink is intended to be non-copying, only $4\frac{1}{2}$ ounces of galls should be used.

This produces a blue-black fluid, not apt to mold. To insure a superior product, careful attention must be paid to manipulation, details, and to the quality of its ingredients. The galls must be free from insect perforations, and the iron in selected crystals free from efflorescence or ferric salt, and the indigo be neutral, or nearly so. If the article sold as "indigo paste" is not at hand, it may be prepared by carefully adding to the ordinary sulfate of indigo a solution of potassic or sodic carbonate until effervescence ceases.

This is said to be the formula used by a large firm in England.

IV.

Extract of logwood.....	av.oz. 3
Potassium bichromate	dr. 3
Hydrochloric acid	fl.oz. 1

Sugarav.oz. 8
 Gum arabic, whole.....av.oz. 2
 Water, to make.....gall. 1

Dissolve the extract and bichromate each in 3 pints of water by the aid of heat, mix the solutions, add the acid, then incorporate the gum and sugar previously dissolved in 2 pints of water.

Black Ink (Non-Copying).

I.

Phenol black B (coal-tar dye)gr. 320
 Waterfl.oz. 28
 Nutgall ink body II.....fl.oz. 38
 Carbolic acidm. 30

Prepare like alizarin non-copying ink,

No. I.

II.

Phenol black B (coal-tar dye)gr. 160
 Tannin ink body II.....fl.oz. 16
 Distilled waterfl.oz. 25
 Carbolic aciddrops 20
 Sugargr. 40

Prepare like alizarin non-copying ink,

No. II.

III.

Extract of logwood.....av.oz. 7
 Lime waterfl.oz. 50
 Carbolic acidfl.dr. 2
 Muriatic acidfl.oz. 1½
 Mucilage of acacia.....fl.oz. 5
 Potassium bichromategr. 90
 Water, to make.....fl.oz. 112

Dissolve the extract in the lime water on a water-bath, stirring constantly, and then add the two acids, which change the color of the solution from red to brownish yellow.

Set the mixture aside until cool, then filter; add the potassium salt, first dissolved in some water, and finally, the remainder of the water.

Black Ink (Writing).

I.

Logwood extract solution.av.oz. 20
 Potassium bichromategr. 90
 Chrome alumav.oz. 5
 Oxalic acidav.oz. 1
 Carbolic acidfl.dr. 1
 Distilled watersufficient

Mix the extract solution with 50 fluid-ounces of water, heat on a water-bath to 90° C., add the potassium bichromate,

chrome alum, and oxalic acid previously dissolved in 15 fluidounces of water; continue the temperature of 90° C. for ½ hour, then add enough water to make the mixture weigh 100 av. ounces, and the carbolic acid; set aside for 2 or 3 days, and decant the clear liquid.

This ink is black in color, and the writing is of the same tint. It is very cheap, and hence is adapted to school purposes.

II.

Phenol black B (coal-tar dye)av.oz. 2
 Sugarav.oz. 2
 Carbolic acidfl.dr. 1
 Sulfuric acid, pure.....m. 20
 Distilled waterfl.oz. 90

Mix the dye with 6 fluidounces of cold water, allow to stand for 2 hours, then add the remainder of the water, in the boiling condition, and the other ingredients, and stir about until dissolved.

This ink writes a handsome blue-black. For school purposes it may be cheapened by reducing the dye even to 1½ av. ounces.

III. This is said to be a formula in use in Denmark for records and important documents. It is an excellent formula:

Tannindr. 6
 Gallic aciddr. 2
 Acaciadr. 4
 Ferrous sulfate, pure.....av.oz. 1
 Carbolic acidm. 20
 Hydrochloric acidfl.dr. 2
 Water, to make.....fl.oz. 35

Dissolve the tannin and gallic acid in a portion of the water, the ferrous sulfate in another portion, the acacia in a third portion, mix the three solutions, and add the acids.

IV. This formula is quite different from any of the others:

Tannic aciddr. 4
 Ferrous sulfatedr. 4
 Iron lactatedr. 4
 Tartaric aciddr. 4
 Pyrogalllic acidgr. 15
 Pyoktaningr. 15
 Mucilage of acacia.....dr. 6
 Water, warmfl.oz. 48

Mix all the ingredients, except the

mucilage, shake well to dissolve the solids, set aside for a few days, agitating occasionally, strain, and add the mucilage.

V. This makes a cheap but not durable ink for school use.

Bismarck brown	gr. 8
Methyl violet	gr. 12
Bengal green	gr. 20
Gum arabic	dr. 2
Water	fl.oz. 16

Mix and dissolve. The first three ingredients are coal tar or so-called aniline dyes. "Brilliant green" may be used instead of Bengal green.

Black Ink (for Fountain Pens).

Decoction of galls (from 6 ozs.)	fl.oz. 32
Solution of ferric chlorid.	fl.oz. 3½
Phenol blue F F F (coal-tar dye)	dr. 1
Carbolic acid	m. 20
Distilled water	fl.oz. 16

Mix the decoction and iron solution in a closed bottle, allow to stand for 2 weeks, filter, in the filtrate dissolve the dye by the aid of heat, and add the acid and water. Allow to stand for a week longer in a cool and dark place, and decant from any sediment which may have formed.

Blue Ink (Copying).

I.	Phenol blue 3 F (coal-tar dye)	gr. 50
	Sugar	av.oz. 1¼
	Distilled water	fl.oz. 3
	Nutgall ink body I.	fl.oz. 32
	Carbolic acid	drops 20
	Prepare like alizarin copying ink No. I.	

II.	Phenol blue 3 F (coal-tar dye)	gr. 45
	Glucose	av.oz. 1¼
	Distilled water	fl.oz. 2
	Tannin ink body I.	fl.oz. 25
	Carbolic acid	drops 15
	Prepare like alizarin copying ink No. I.	

III. A blue copying ink that may be used without a press. by merely placing the letter between the leaves of the book and closing it energetically, is prepared according to this formula:

Aniline blue	av.oz. 1
Alum	av.oz. ½
Glycerin	fl.oz. 24
Water	fl.oz. 64

Instead of the aniline blue, any other water-soluble aniline may be used. Dissolve this in the water, add the alum, dissolve it, and then incorporate the glycerin.

Blue Ink (Non-Copying).

I.	Phenol blue 3 F (coal-tar dye)	gr. 100
	Water	fl.oz. 28
	Nutgall ink body II.	fl.oz. 38
	Carbolic acid	m. 30
	Prepare like alizarin non-copying ink, No. I.	

II.	Phenol blue 3 F (coal-tar dye)	dr. 1
	Tannin ink body II.	fl.oz. 16
	Distilled water	fl.oz. 25
	Carbolic acid	drops 20
	Sugar	gr. 40
	Prepare like alizarin non-copying ink, No. II.	

Blue Ink (Writing).

I.	Resorcin blue M (coal-tar dye)	gr. 50
	Sugar	gr. 200
	Oxalic acid	gr. 10
	Distilled water	fl.oz. 20

Mix the dye with 1 fluidounce of cold water, set aside for 2 hours, then add the remainder of the water, in the hot condition, and the other ingredients, and stir about until dissolved.

This ink writes a handsome blue and flows readily, but has the disadvantage of somewhat corroding the pen, and hence the latter should be cleaned frequently.

Brown Ink.

Catechu	av.oz. 1
Water, warm	fl.oz. 16
Potassium bichromate solution, 10%	sufficient

Dissolve the catechu in the water, filter, and add enough of the bichromate solution to impart the proper color.

Eosin Ink. (Scarlet Ink—Coral Ink.)

I.

Eosin A, yellowish.....av.oz.	1/2
Sugar	av.oz. 1
Distilled water	fl.oz. 32

Mix the dye with 1 fluidounce of cold water, set aside for 2 hours, add the remainder of the water, in the hot condition, and the sugar, and stir until dissolved.

There are various shades of eosin, so that it will be necessary to obtain just the right kind.

II.

Eosin (water-soluble).....dr.	2
Alcohol	fl.oz. 2
Mucilage of acacia.....	fl.oz. 1
Water, to make.....	fl.oz. 16

Dissolve the eosin in about 12 fluid-ounces of water, a small portion of this being poured hot upon the eosin contained in a bottle; next add the alcohol, and shake; finally, add the mucilage and enough water to make 16 fluidounces.

Glossy Inks.

Ink may be made glossy by the addition of mucilage of gum arabic or of a solution prepared by heating a mixture of borax, 45 grains; shellac, 15 grains; sugar, 30 grains, and water, 4 fluid-ounces.

See also Mourning Ink.

Gold Ink.

I. This may be prepared by mixing equal parts of potassium iodid and lead acetate, placing them upon a filter, and then pouring on twenty times the quantity of boiling distilled water. As the filtrate cools the lead iodid separates in golden scales. After the filtrate has cooled the precipitate should be collected on a filter, washed with a little cold water, and rubbed up to an ink with mucilage of acacia. The ink must be shaken before using.

II. Reduce gold foil to powder by triturating in a mortar with honey or syrup, dilute with water, decant the liquid, wash the gold several times with water; dry and mix with mucilage of acacia.

Green Ink (Copying).

I.

Aniline green D.....dr.	2
Sugar	av.oz. 1 1/4
Distilled water	fl.oz. 3
Nutgall ink body I.....	fl.oz. 32
Carbolic acid	drops 20

Prepare like alizarin copying ink,,

No. I.

II.

Aniline green D.....gr.	70
Glucose	av.oz. 1 1/4
Distilled water	fl.oz. 2
Tannin ink body I.....	fl.oz. 25
Carbolic acid	drops 15

Prepare like alizarin copying ink, No.

II.

Green Ink (Non-Copying).

I.

Aniline green D.....gr.	200
Water	fl.oz. 28
Nutgall ink body II.....	fl.oz. 38
Carbolic acid	m. 30

Prepare like alizarin non-copying ink

No. I.

II.

Aniline green D.....gr.	100
Tannin ink body II.....	fl.oz. 16
Distilled water	fl.oz. 25
Carbolic acid	drops 20
Sugar	gr. 40

Prepare like alizarin non-copying ink

No. II.

Green Ink (Writing).

Methyl green, bluish (water soluble)	gr. 96
Sugar	gr. 192
Distilled water	fl.oz. 20

Mix the dye with 1 fluidounce of cold water, set aside for 2 hours, then add the remainder of the water, in the hot condition, and the sugar, and stir about until dissolved.

Mourning Ink.

This is a deep black, shiny ink used by bereaved relatives to notify friends and other relatives of their loss. A satisfactory formula is said to be the following:

Borax, powder	av.oz. 1
Shellac, orange	av.oz. 3
Water, boiling	fl.oz. 16
Lampblack	sufficient

Dissolve the borax in the water and in this solution dissolve the shellac, aiding

the process by constant stirring and the application of some heat. Rub up a small quantity of the lampblack with sufficient of the liquid to form a paste, and adding more and more liquid until a suitable ink is obtained.

Orange Ink.

Aniline orange	av.oz.	½
Sugar	av.oz.	1
Distilled water	fl.oz.	32

Mix the dye with 1½ fluidounces of water, set aside for 2 hours; then add the sugar and the remainder of the water, in the hot condition, and stir until dissolved.

Purple Ink.

Aniline purple.....	gr.	80
Alcohol	fl.dr.	12
Mucilage of acacia.....	fl.dr.	10
Water	fl.oz.	17

Dissolve the dye in the alcohol and then add the other ingredients.

This color is brilliant at first, but is liable to fade.

Red Ink (Aniline).

See Eosin Ink.

A red, inclining to purple may also be made by dissolving fuchsin (ordinary aniline red) in water in the proportion of about 2 drams to the pint. Solution may be more readily effected by first dissolving the color in a little alcohol (about 5 fluidrams), and then adding the water. A small proportion of gum arabic is sometimes added to give the ink more "body." Two drams to the pint is sufficient.

Another good formula is the following:

Erythrosin	gr.	75
Water	fl.oz.	16

Thicken with gum arabic, and add a little boric acid or other preservative.

Red Ink (Carmine).

I.	Carmine	gr.	192
	Ammonium carbonate.....	gr.	192
	Ammonia water	fl.oz.	4
	Mucilage of acacia.....	fl.oz.	3
	Distilled water.....	fl.oz.	13
	Mix the carmine and ammonium car-		

bonate, dissolve in the ammonia water, and add the remaining ingredients.

II.

Carmine	gr.	128
Ammonia water.....	fl.oz.	8
Distilled water.....	fl.oz.	8
Gum arabic.....	av.oz.	¾
Dissolve the carmine in the ammonia water, add the distilled water and gum, and dissolve the latter by agitation.		

Red Ink (Cochineal).

Cochineal, powder.....	av.oz.	1½
Potassium carbonate.....	av.oz.	3
Cream of tartar.....	av.oz.	9
Potassa alum.....	dr.	4½
Mucilage of acacia.....	fl.oz.	3
Alcohol	fl.oz.	1½
Oil of clove.....	drops	20
Distilled water.....	fl.oz.	29

Macerate the cochineal and potassium carbonate with 25 fluidounces of water in a flask for 2 days; then add the cream of tartar and alum, heat on a water bath until all the carbonic acid gas is expelled, add the alcohol and filter. Wash the filter with 2 fluidounces of water, and to the filtrate add the mucilage and the oil.

Writing done with cochineal ink is very permanent.

Red Ink (Copying).

I.

Ponceau R R (coal tar dye)...	dr.	2½
Sugar	av.oz.	1¾
Distilled water.....	fl.oz.	3
Nutgall ink body I.....	fl.oz.	32
Carbolic acid	drops	20
Prepare like alizarin copying ink		

No. I.

II.

Ponceau R R (coal tar dye)...	dr.	2
Glucose	av.oz.	1¾
Distilled water.....	fl.oz.	2
Tannin ink body I.....	fl.oz.	25
Carbolic acid.....	drops	15
Prepare like alizarin copying ink		

No. II.

Red Ink (Non-Copying).

I.

Ponceau R R (coal tar dye)...	gr.	192
Water	fl.oz.	28
Nutgall ink body II.....	fl.oz.	38
Carbolic acid.....	m.	30
Prepare like alizarin non-copying ink No. I.		

II.

Ponceau R R (coal tar dye).....	gr. 100
Tannin ink body II.....	fl.oz. 16
Distilled water.....	fl.oz. 25
Carbolic acid.....	gr. 20
Sugar	gr. 40

Prepare like alizarin non-copying ink No. II.

Scarlet Ink.

The so-called scarlet inks are usually the same as the eosin inks.

Silver Ink.

This may be prepared from silver leaf by a process similar to making gold ink from gold leaf.

Vanadium Ink.

Vanadium tannate was first proposed for use as a writing ink by Berzelius, because the writing is not affected by acids, but the high price of vanadium salts was a great obstacle to its introduction. Since these salts have been more largely prepared for use in the manufacture of aniline black and other dyes, vanadium ink has again been proposed. The following formula may be used:

Tannic acid.....	av.oz. 1
Ammonium vanadium.....	gr. 18
Water	fl.oz. 10

Dissolve the acid in 9 fluidounces of water and the vanadium in 1 fluidounce of water, and mix the solutions.

This ink flows with a deep-black color from the pen, without spreading or striking through the paper, although it contains no gum. It has a nice gloss, cannot be copied, dries quickly, and, even if the writing is laid in water for 24 hours, does not change its black color. It is very useful for writing addresses of letters, postal cards, etc., when used fresh. Dilute acids do not alter it, but solutions of chlorinated potassa (or soda) bleach it completely. After a few weeks the tint of the ink begins to change, writing executed with it becomes lighter and somewhat yellowish, and in about 3 months the change is completed, when it has a fox-yellow tint. The writing is still plainly legible,

however, and cannot be removed either by water or by acids.

Violet Ink (Copying).

I.

Phenol blue 3 F (coal tar dye).....	gr. 40
Ponceau R R (coal tar dye).....	dr. 1
Sugar	av.oz. 1 1/4
Distilled water.....	fl.oz. 3
Nutgall ink body I.....	fl.oz. 32
Carbolic acid.....	drops 20

Prepare like alizarin copying ink

No. I.

II.

Methyl violet 3 B (coal tar dye).....	gr. 100
Sugar	gr. 100
Oxalic acid.....	gr. 20
Distilled water.....	fl.oz. 20

Dissolve the dye by the aid of heat in the water, add the other ingredients, and again dissolve.

Violet Ink (Non-Copying).

I.

Phenol blue 3 F (coal tar dye).....	gr. 45
Ponceau R R (coal tar dye).....	dr. 1
Water	fl.oz. 28
Nutgall ink body II.....	fl.oz. 38
Carbolic acid	m. 30

Prepare like alizarin non-copying ink No. I.

II.

Phenol blue 3 F (coal tar dye)	gr. 30
Ponceau R R (coal tar dye).....	gr. 40
Tannin ink body II.....	fl.oz. 16
Distilled water.....	fl.oz. 25
Carbolic acid.....	drops 20
Sugar	gr. 40

Prepare like alizarin non-copying ink No. II.

Violet Ink (Writing).

Methyl violet 3 B (coal tar dye).....	gr. 90
Sugar	gr. 90
Oxalic acid.....	gr. 20
Distilled water.....	fl.oz. 20

Mix the dye with 1 fluidounce of cold water, set aside for 2 hours, then add the remainder of the water, in the hot condition, and the other ingredients, and stir until dissolved.

White Ink.

White inks, for writing on colored

surfaces, consist either of a white mineral suspended in a viscid medium, or of chemicals affecting the coloring in the paper. This, in the case of ultramarine, is an oxalic acid solution, or hydrochloric acid, according to this formula:

Ink for Blue Paper.

Hydrochloric acid.....	f.dr.	1
Mucilage	m.	30
Water	f.dr.	7

To produce white writing on photographs, iodine is employed, as in the next formula:

Ink for Silver Prints.

Iodine	gr.	15
Acacia	gr.	15
Potassium iodide.....	gr.	150
Water	f.oz.	1

For preparations of the first order take lightest zinc oxide, or lead or magnesium carbonate, or freshly precipitated barium sulfate, or starch (all in an impalpable powder) and suspend in a diluted solution of gum arabic, dextrin, or tragacanth. The mixture requires shaking from time to time to keep the pigments from separating. The "ink" may be preserved by addition of oil of clove or other antiseptic to prevent decomposition of the mucilage.

HECTOGRAPH INKS. (Chromographic Inks.)

These are inks which are used in connection with hectographs (see Hectographs Masses or Pads). As will be observed they are made with coal tar, or the so-called aniline dyes.

Hectograph Ink (Black).

Dissolve nigrosin in water in the proportion of 1 of the former to 5 or 7 of the latter. Or use the following:

Nigrosin, deep-black E.....	gr.	30
Methyl violet.....	gr.	10
Gum arabic	gr.	8
Glycerin	f.dr.	3
Alcohol	f.dr.	6

Dissolve the dyes in the alcohol, the gum in the glycerin, and mix the solutions.

Hectograph Ink (Blue).

Resorcin blue M	dr.	1
Glycerin	m.	30
Alcohol	f.dr.	1
Acetic acid, glacial.....	drops	8
Distilled water	f.oz.	1

Dissolve the dye in a mixture of the other ingredients by the aid of heat.

Hectograph Ink (Green).

I.

Aniline green D.....	dr.	2
Acetic acid, glacial.....	drops	6
Glycerin	m.	30
Alcohol	f.dr.	1
Distilled water.....	f.oz.	1

Dissolve the dye in a mixture of the other ingredients by the aid of heat.

II.

Aniline blue, water-soluble	dr.	1
Picric acid.....	dr.	1
Glycerin	dr.	1
Alcohol	f.dr.	3
Water	f.dr.	3

Dissolve the solids in the mixed liquids contained in a flask by the aid of a gentle heat.

Hectograph Ink (Red).

I.

Fosin, ff 40.....	dr.	3
Distilled water.....	f.dr.	6½
Glycerin	m.	30

Dissolve the dye in the mixed liquids.

Hectograph Ink (Violet).

Violet ink for hectographic purposes is the most popular as it furnishes the largest number of satisfactory copies.

I.

Methyl violet 3 B.....	gr.	50
Alcohol	f.dr.	1
Distilled water.....	f.oz.	1

Dissolve the methyl violet in the alcohol and water by the aid of gentle heat.

II.

Violet aniline.....	dr.	2
Alcohol	f.dr.	1
Acetic acid, diluted.....	f.dr.	1
Water	f.dr.	7

Dissolve by trituration.

III.

Violet aniline.....	gr.	40
Alcohol	f.dr.	2

Glycerin	fl.dr. 1
Water	fl.dr. 2

Dissolve by trituration.

MARKING INKS. (Laundry Ink.)

These are the inks intended for marking clothes prior to passing them through the laundry. Most of them are made with silver salts as a basis.

In order to distinguish from branding inks, read article under Branding Inks. See also Indelible Inks.

Marking Ink (Black).

I.

Silver nitrate.....	av.oz. 5
Gum arabic.....	av.oz. 3
Ammonia water.....	fl.oz. 12
Lampblack	dr. 3

Dissolve the silver nitrate and gum arabic in the ammonia water, by frequent agitation in a dark amber bottle, then incorporate the lampblack with this solution by trituration.

In using, write with a quill pen, allow the writing to dry, then pass a hot iron over it.

If the quantity of gum be increased to 5 fluidounces, the ink may be spread on a plate of glass and a rubber stamp may then be used to apply it. When the mark is dry, it should be ironed as in the preceding case.

II. This is Woodhouse's indelible ink.

Silver nitrate.....	dr. 4
Infusion of nutgall.....	fl.dr. 1
Acacia	dr. 1
Distilled water.....	fl.oz. 4

Dissolve the silver nitrate in 4 fluidounces of water. In the remainder of the water dissolve the acacia and add the infusion. Then mix the two liquids. The infusion of nutgall should be made by pouring 4 fluidrams of boiling distilled water upon 15 grains of powdered nutgall.

III.

Asphalt, in pieces.....	av.oz. 2
Benzol	fl.oz. 8
Coal tar.....	av.oz. 8

Dissolve the asphalt in the benzol and add the coal tar.

In using the ink, employ an ordinary

pen, and if it should be too thick, thin it with a little oil of turpentine. This ink does not spread, and requires no heating. It never fades, and it is not affected by anything.

IV. The indelibility of this ink depends on the fact that when potassium bichromate and gelatin come together, particularly in the form of a thin film, in the presence of daylight, the film becomes insoluble in hot or cold water.

Gelatin	gr. 16
Potassium bichromate.....	gr. 16
Nigrosin	gr. 80
Water	fl.oz. 8

Dissolve the gelatin and the nigrosin in most of the water, and the potassium bichromate in the remainder. Mix the two solutions in an amber-colored bottle.

If it is found that the ink "gums" in the pen, the quantity of gelatin and bichromate may be somewhat reduced.

The ink, when properly made, cannot be entirely removed by hot or cold water, acids or alkalies.

Marking Ink (Blue).

V.

Silver nitrate.....	dr. 4
Stronger ammonia water...	fl.dr. 12
Sodium carbonate, crystal....	dr. 4
Copper sulfate.....	dr. 2
Mucilage of acacia.....	fl.oz. 2
Distilled water, to make....	fl.oz. 4

Dissolve the silver salt in the ammonia, and the soda and copper salt in a portion of the water; mix the two solutions and add the mucilage and the remainder of the water. If the ammonia water mentioned above is insufficient for solution, more should be added.

Marking Ink (Red, Crimson or Carmine).

VI.

Silver nitrate.....	av.oz. 1
Sodium carbonate, pure crystals	av.oz. 1½
Tartaric acid.....	gr. 160
Stronger ammonia water..	fl.oz. 2
Carmine	gr. 6
Sugar	av.oz. ½
Gum arabic.....	av.oz. 1½
Distilled water	sufficient

Dissolve the silver nitrate and so-

dium carbonate separately in 16 fluidounces of distilled water, and mix the solutions. Wash the precipitate by decantation with 32 fluidounces of water three times; collect on a filter, and wash with 4 ounces of water; drain well; transfer the precipitate to a mortar and rub up with the tartaric acid; when effervescence ceases, add the ammonia (in which the carmine has been dissolved), then the sugar and gum (previously made into a cream with water). Finally, make up to 6 fluidounces with distilled water.

VII. The following makes a purplish red color and is reasonably permanent, but it is a complicated process. First prepare a solution composed of

Sodium carbonate, pure crystals	dr. 3
Gum arabic.....	dr. 3
Water	fl.oz. 12

With this moisten the spot to be marked, and dry and smooth with a hot flat iron. Then on the prepared spot write with a solution of 1 dram of platinic chlorid in 2 fluidounces of water, allow the writing to dry, and then apply a liquid compound of 2 drams of tin chlorid and 1 fluidounce of water.

Marking Ink, Gold.

VIII. (A).

Chlorid of gold and sodium	gr. 30
Distilled water.....	fl.dr. 5
Gum arabic	dr. 1

(B).

Oxalic acid.....	gr. 60
Water	fl.dr. 5
Gum arabic	dr. 2

Moisten the goods with B, allow to dry, then write upon the prepared surface with A. A quill pen is to be preferred. After writing pass a hot iron heavily over the mark.

Marking Ink, Osmium.

IX. Use a solution of osmic acid in water, one in fifty; the marks will soon assume an intense dark blue color. The fabric must previously be sized, with mucilage for example, and ironed.

Marking Ink, Platinum.

X.

Platinum chlorid.....	gr. 18
Water	fl.dr. 3

Mucilage of acacia, sufficient to make ink flow properly.

The portion of the fabric to be marked must previously be treated with a small amount of solution of stannous chlorid and mucilage of acacia. After writing, the fabric should be gently heated when the marks will assume a black or blackish color.

INKS, MISCELLANEOUS.

A variety of inks and ink preparations, or preparations known as "inks," but which are not writing inks are mentioned under this heading.

Branding Ink.

By this is meant a liquid used for marking boxes, bales, packages, etc., by means of a small brush. They are frequently termed marking inks, and are also used for stenciling purposes.

I.

Shellac	av.oz. 2
Borax	av.oz. 2
Gum arabic.....	av.oz. 2
Water	fl.oz. 25
Pigment	sufficient

Boil the borax and shellac in the water until they are dissolved, add the gum arabic and allow to cool. Add water to complete 25 fluidounces and then stir in the pigment, using either Venetian red, lampblack, ultramarine, or Prussian blue. Black is improved by the addition of blue. Green may be produced from a mixture of blue and chrome yellow.

II. Rub lampblack, gum arabic, and some fine clay together like pipe clay or fuller's earth, and then mix with water to suitable consistence. Lampblack imparts the color, clay the body and the gum the adhesiveness. Any other gummy substances such as dextrin may be used as the adhesive. The color may be varied as in the case of No. I.

III. Mix boiled linseed oil with sufficient lampblack.

IV. Another good preparation is asphaltum varnish thinned suitably with oil of turpentine, and then adding a small amount of lampblack or other black pigment.

Chinese Ink.

See India Ink.

Diamond Ink.

This is a liquid used for etching glass. Commercial strong hydrofluoric acid often gives negative results, because when applied in its pure state, it produces such a smooth corrosion of the glass that it may elude superficial inspection. The most common method consists in mixing ammonium fluorid with precipitated barium sulfate and decomposing with sulfuric acid, and is as follows:

I.

Ammonium fluorid.....av.oz. 1
Barium sulfate.....av.oz. 3
Sulfuric acid.....sufficient

Rub the two solids together, transfer to a platinum, lead or gutta-percha vessel, and add sufficient sulfuric acid to produce a cream-like paste. Operators must be cautioned against inhaling the exceedingly acrid vapors of hydrofluoric acid. Apply with a quill or camel's-hair pencil.

II.

Ammonium fluoridav.oz. 2
Barium sulfateav.oz. 2
Hydrofluoric acid, fuming.sufficient

Mix the two salts in a porcelain mortar, transfer to a platinum or lead vessel, and by means of a platinum wire stir in enough of the acid to make a thin paste.

Writing may be performed with a steel pen, allow it to remain for one-half hour, and then wash off with water. To make etching more visible, rub in a little printer's ink.

III.

Sodium fluoridgr. 75
Potassium sulfategr. 15
Waterfl.oz. 3

Make a solution and label A.

Zinc chloridgr. 45
Hydrochloric aciddr. 2
Waterfl.oz. 3

Make a solution and label B.

In using, mix equal quantities of the solutions in a gutta-percha or leather vessel, or in a glass vessel the interior of which has been covered with a layer of paraffin, or in a hollow in a piece of paraffin wax.

Drawing Ink.

Use either Endorsing Ink, Enamel Ink, or Indestructible Ink for Glass, which see.

Enamel Ink.

An ink, or rather varnish, for writing labels which are intended to resist the action of acids, etc., may be prepared as follows:

Shellacav.oz. 1
Boraxav.oz. 1½
Nigrosin (water-soluble).....av.oz. ½
Tannic acidgr. 15
Picric acidgr. 5
Ammonia waterfl.dr. 12
Watersufficient

Dissolve the shellac and borax in 15 to 20 fluidounces of water by the aid of heat, and filter hot; to the filtrate add the nigrosin, acids and ammonia, and then enough water to reduce the mixture to the required dilution.

The ink should be of such consistence that it will readily flow from the pen.

Endorsing Ink.

Shellacav.oz. 2
Boraxav.oz. 1
Waterfl.oz. 18
Mucilage of acacia.....fl.oz. 2½

Boil the first three together for a short time, filter, add the mucilage, and to the mixture add enough lampblack or powdered indigo or a mixture of the two to bring it to the required shade.

The ink dries with a glossy surface and is practically indestructible.

Indelible Inks.

All the inks under the heading of Inks, Marking, are indelible and are intended for marking clothes. There are also a number of the formulas under the title of Stamping Inks which are in-

delible and which differ from the marking inks only in the fact that the former are applied with a pen and the latter with a stamp.

Indestructible Ink for Deeds, Etc.

Use either Endorsing Ink, which see, or the following:

Oil of lavender	fl.oz.	1
Gum copal	fl.dr.	1
Lampblack	gr.	10
Indigo	gr.	2

Dissolve the gum in the oil by the aid of a gentle heat, then thoroughly incorporate the pigments which must have been rubbed to an impalpable powder.

Indestructible Ink for Writing on Glass.

Labels on bottles containing solutions of various chemical substances are often attacked by the latter, and in a short time become illegible. In such cases it is advisable to write on the glass directly with an ink that is not affected by chemical substances. Such an ink is made according to the following formula:

Shellac	dr.	2½
Alcohol	fl.oz.	2½
Borax	dr.	4½
Distilled water	fl.oz.	4
Methyl violet	gr.	10

The shellac is dissolved in the alcohol, and the borax in the water. The alcoholic solution, previously slightly warmed, is then added to the borax solution, little by little, and as soon as the two solutions are thoroughly mixed the methyl violet is added.

Bottles and other vessels marked with this ink can be readily cleaned with a damp cloth without causing the slightest injury to the label.

Lithograph Ink.

The following formulas are used:

I.

Yellow wax	av.oz.	10
Shellac	av.oz.	8
Mastic	av.oz.	5
Tallow	av.oz.	4
Tallow or curd soap.....	av.oz.	4
Venice turpentine	av.oz.	½
Lampblack	av.oz.	2½
Mix all but the lampblack by fusion		

and then thoroughly incorporate the latter.

II.

Shellac	av.oz.	6
Mastic	av.oz.	4
Venice turpentine	av.oz.	½
Yellow wax	av.oz.	8
Tallow	av.oz.	3
Lampblack	av.oz.	5½
Prepare like the preceding.		

India Ink. (Chinese Ink.)

The following processes are said to be used: Rub lampblack to a paste with a very weak liquor potassa, and diffuse through water made slightly alkaline with the potassa. Then collect the pigment, wash it with water, and dry it. The dry powder is then to be levigated to a smooth stiff paste with a strong filtered decoction of Irish moss or quince seed, a few drops of essence of musk and about half as much essence of ambergris being added towards the end of the process. The moss is then molded, dried, and ornamented with Chinese characters.

Another process is this: Boil a weak solution of fine gelatin in a Papin's digester for 2 hours, then in an open vessel for one hour filter the liquid, evaporate it to proper consistency, either in a steam or salt water bath, and make into a paste as before with pure lampblack which has previously been heated to dull redness in a crucible.

Invisible Inks (Sympathetic, Fading, Vanishing or Diplomatic Inks).

Invisible or sympathetic inks are fluids used for writing purposes, the characters made with them being invisible, but becoming visible upon the application of heat or of some suitable reagent. Writing made with those inks which becomes visible upon the application of heat, again becomes invisible upon cooling; on the contrary, writing developed by chemical action remains permanent.

I.

Cobalt chlorid	dr.	3
Glycerin	fl.dr.	1
Water	fl.oz.	4
Mix and dissolve the ingredients.		

The characters traced with this ink become blue on gently heating the paper.

II.

Linseed oil	m.	30
Ammonia water	fl.oz.	1
Water	fl.oz.	5

To make the writing or the drawing appear which has been made upon paper with the ink, it is sufficient to dip it into water. On drying, the traces disappear again, and reappear by each succeeding immersion.

The mixture must be agitated each time before the pen is dipped into it, as a little of the oil may separate and float on top, which would, of course, leave an oily stain upon the paper.

III. Write with tincture of iron chlorid diluted with 10 parts of water, and develop with a blotter moistened with a solution of tannin or decoction of nutgalls or strong tea.

This may be reversed by writing with a decoction of nutgalls and developing with the blotter moistened with tincture of iron.

Label Ink, Waterproof.

Use either Enamel Ink or Indestructible Ink for Glass, which see.

Mimeograph Ink.

Boiled linseed oil	av.lb.	2
Lampblack	av.lb.	1
Indigo	dr.	3
Prussian blue	dr.	3

Use the oil hot and incorporate the solids, making a thoroughly smooth mixture. The lampblack and indigo should both be of the very best quality. The mixture is to be thinned to the desired consistency with a mixture of equal parts of oil of turpentine and ligroine.

Persian Ink.

This is a lasting ink which is a sort of compromise between Indian or Chinese ink and the iron inks of the western world. It is as follows:

Lampblack	part	1
Iron sulfate	part	1
Nutgall	part	2
Gum arabic, purest	parts	4

Reduce the substances to the finest powder, mix intimately and then on a tile or stone work up, adding water, at first in small amount at a time, until the mass is homogenous, when it may be added more freely. The amount of water added is according to the use to which the ink is to be put.

Shading-Pen Ink.

This may be made by rubbing up soluble blue with a thin mucilage of acacia and adding some glycerin. A black ink may be made by rubbing up lampblack in the same manner. Inks of other colors may be made by using various anilines dyes. The so-called stamping inks may be used as shading-pen inks.

Shoe-Finisher's Ink.

See under the regular heading of Shoe-Finisher's Ink.

Show-Card Ink.

I. A common method of making an ink for show-card purposes is to dissolve a teaspoonful of some aniline dye in a pint of water by the aid of heat, in this solution dissolving an ounce of yellow dextrin to give body to the ink.

II. Another formula is the following:

Shellac, bleached	av.oz.	2
Borax, crystal	av.oz.	1
Water	fl.oz.	16

Rub up the shellac and borax together in a mortar until reduced to a fine powder; then place the mixture in an enameled iron vessel and add the water; apply heat, and boil the whole together until the mixture begins to foam when it is removed from the fire and allowed to cool. The boiling process is to be repeated until all of the shellac is finally dissolved. When cold the solution is to be strained through fine cheesecloth, and constitutes the vehicle for the pigment, sufficient Frankfort black or lampblack being stirred in, together with a little finely powdered indigo, to produce a bluish or jet-black color.

A variety of colored inks may be made by the addition of various pig-

ments. A thoroughly smooth mixture should be made of the pigment with the liquid.

If a glossy ink is desired, yellow dextrin should be added in the proportion of 1 to 4 av. ounces of dextrin to 16 fluidounces of ink.

III. This makes a good black show-card ink:

Asphaltum	av.oz. 4
Venice turpentine	av.oz. 2
Lampblack	av.oz. 1
Oil of turpentine.....	fl.oz. 16

Dissolve the asphaltum and Venice turpentine in the oil and with this solution thoroughly incorporate the lamp-black.

Stamping Inks. (Rubber Stamp Inks.)

These inks are generally used for stamping impressions (printing, etc.) on paper. They are made with glycerin as a vehicle and a water-soluble coal-tar color (so-called "aniline dye") imparts the color. Dextrin may be added to increase the "body" or density of the mixture. These inks must be perfectly smooth and the dye thoroughly dissolved to make a nice, clean impression. These inks are used for rubber stamps, as oily inks speedily decompose rubber. The following is a good example.

See also Inks, Stamping (for use with metal stamps).

I.

Aniline blue, water-soluble,

I B	av.oz. $\frac{3}{4}$
Yellow dextrin	av.oz. $2\frac{1}{2}$
Distilled water	fl.oz. $2\frac{1}{2}$
Glycerin	fl.oz. 14

Mix the dye and dextrin, dissolve by the aid of a water bath in the water, add the glycerin, and replace the water lost by evaporation.—D.

Other colors are produced by substituting for the blue dye any one of the following:

Violet—Methyl violet B....	av.oz. $\frac{1}{2}$
Red—Diamond fuchsin I....	av.oz. $\frac{1}{2}$
Or Eosin B B N.....	av.oz. $\frac{3}{4}$
Yellowish green—Methyl green	av.oz. 1

Brown—Vesuvium B.....	av.oz. $1\frac{1}{4}$
Black—Phenol black B....	av.oz. $\frac{3}{4}$
—D.	

II. Another good formula is this:

Nigrosin	av.oz. $\frac{1}{2}$
Water	fl.oz. $2\frac{1}{2}$
Alcohol	fl.oz. $2\frac{1}{2}$
Glycerin	fl.oz. 12

Dissolve the nigrosin in the alcohol, add the other ingredients, and make a perfectly smooth mixture.

This ink is thinner than the preceding and owing to the presence of alcohol dries more quickly.

Nigrosin is a coal-tar dye, of which there are several varieties which differ in solubility.

III.

Borax	av.oz. 1
Shellac, bleached	av.oz. 1
Mucilage of acacia.....	fl.oz. 1
Ultramarine blue	av.oz. $\frac{1}{2}$ to 1
Water,	
Glycerin, of each.....	sufficient

Dissolve the borax in 10 fluidounces of water, heat to boiling, add the shellac, and dissolve. Now triturate the mucilage with the ultramarine, add this to the shellac solution, and then enough of equal parts of water and glycerin to make 12 fluidounces.

IV. Take of the finest quality of lampblack and rub into a smooth paste with a sufficient quantity of glycerin; or take a good black printer's ink and thin the same with kerosene.

Formulas I and II are most satisfactory.

Stamping Ink. (For Use with Metal Stamps.)

Rubber-stamp inks usually have glycerin as a vehicle; metal-stamp inks may have oil or glycerin as a vehicle, and hence the preceding rubber-stamp inks may be used as metal-stamp inks, or the formulas given below may be used. The formulas mentioned are of two varieties, one containing the coloring matter in suspension, the other in solution. In either case a perfectly smooth mixture must be made.

I. Mixture of pigments with oil:**A. Ultramarine blue:**

Ultramarine blueav.oz. 1
 Olive oilfl.oz. 3
 Mix intimately.

B. Dark blue:

Prussian blueav.oz. $\frac{1}{2}$
 Ultramarine blueav.oz. $\frac{1}{4}$
 Olive oilfl.oz. 4

Prepare like the preceding. The prussian blue alone does not mix readily with oil, and hence the ultramarine is added.

C. Green:

Verdigrisav.oz. $2\frac{1}{2}$
 Oleic acid, crude.....fl.oz. $\frac{1}{2}$
 Olive oilfl.oz. 7
 Prepare like the preceding.

D. Red:

Cinnabar or vermillion....av.oz. 4
 Olive oilfl.oz. 6
 Prepare like the preceding.

E. Black:

Gas carbon or lampblack...av.oz. $1\frac{1}{2}$
 Olive oilfl.oz. $8\frac{1}{2}$

—D.

II. Solution of dye in oil:

Anilines or coal-tar dyes for this purpose must be the kind known as oil-soluble. In preparing these inks, rub the dye with the oleic acid to perfect smoothness, then add the oil, little by little, with constant rubbing. After incorporating all of the oil, heat the mixture under constant stirring to about 45° C. until the dye is completely dissolved.

While olive oil is not a drying oil, the oleic acid causes it to be absorbed by paper and thus prevent rubbing.

A. Red:

Bordeaux red aniline.....gr. 75
 Scarlet red aniline.....gr. 75
 Oleic acid, crude.....fl.dr. 5
 Castor oilfl.oz. 10
 Prepare as described above.

B. Blue:

Aniline bluedr. $2\frac{1}{2}$
 Oleic acid, crude.....fl.dr. 5
 Castor oilfl.oz. 10
 Prepare like the preceding.

C. Violet:

Aniline violet.....dr. $2\frac{1}{2}$
 Oleic acid, crude.....fl.dr. 5
 Castor oilfl.oz. 10
 Prepare like the preceding.

D. Black:

Aniline blackdr. 4
 Oleic acid, crude.....fl.dr. 6
 Castor oilfl.oz. 10
 Prepare like the preceding.

E. Green:

Aniline bluedr. 2
 Aniline lemon yellow.....gr. 75
 Oleic acid, crude.....fl.dr. 5
 Castor oilfl.oz. 10
 Prepare like the preceding.—All from

D.

Stencil Inks.

These are the same as Branding Inks, which see.

Sympathetic Inks.

See Invisible Inks.

Typewriter Ink.

Typewriter ink is of two kinds, one being made with petrolatum and lamp-black or similar pigment, the other with glycerin and alcohol and aniline color. The former is to be used if a permanent record is desired.

In making the first kind, put some best-quality petrolatum into a suitable vessel, and melt it by placing the vessel on a fire; then put as much lamp-black or bone black as the petrolatum will take up without becoming granular. To effect this incorporation the black pigment should be put in a little at a time, and the whole thoroughly stirred while making the additions. Be careful not to let the petrolatum be in excess, as it will cause the print to have a greasy outline; while on the other hand, if the pigment be in excess, the print will not be clear. Ordinary bone black does not make a good product; purified animal charcoal will do better. If the petrolatum is too soft, add a small amount of yellow wax.

When a proper mixture of petrolatum and pigment has been made, remove the vessel from the fire, and while it is cooling mix equal parts of petrolatum, benzin and oil of turpentine, and in this mixture put the black petrolatum compound, mixing in a little of the other, with constant stirring, so as to effect a thorough combination, and the petro-

latum compound becomes dissolved. The quantity of the volatile solvent should be sufficient to render the fluid ink of the consistence of oil paint; the result will be a good, permanent black ink, which will not be rubbed off with water like aniline inks. For colored inks of this class use Prussian blue, red led, chrome yellow; and for inks of the aniline class use these dyes dissolved in equal parts of alcohol and glycerin; thus, for a black aniline ink dissolve one-half av. ounce of aniline black in 13 fluidounces alcohol, and then add the glycerin. Ink the ribbon in the usual way.

Having prepared the ink, proceed to ink the ribbon; the secret of success lies in the proper application of the ink to the ribbon. Thus: wind the ribbon on a piece of cardboard, spread on a table several layers of newspapers, then unwind the ribbon in such lengths as may be most convenient, and lay it flat on the paper; apply the ink, after well shaking it, by means of a soft brush, and rub it well into the interstices of the ribbon with a toothbrush. Hardly any ink should remain visible on the surface.

For inking typewriter ribbons the following process is also recommended: Into 2 fluidounces of any aniline writing ink put a teaspoonful of mucilage of acacia, and a teaspoonful of brown sugar, warm the mixture, and immerse the ribbon from the typewriter long enough for it to become well saturated. When dry, spread the ribbon on a board and brush it well with glycerin. Should there be too much color in the ribbon, press it out between absorbent papers with a warm flatiron; or if too dry, brush it again with glycerin.

The secret of the ribbon giving out its color is the glycerin, and if there is body enough in the color there is no danger that it cannot be made to work well. A ribbon so prepared is not affected by the dryness or humidity of the atmosphere.

It is necessary that the ribbon should retain a certain degree of moisture, for the gum and sugar make it dry and harsh, so the glycerin coating is put on; but there is danger of smearing the paper with too much moisture, or causing a wrinkled surface, and the ironing obviates this.

Users of the typewriter should so set a fresh ribbon as to start at the edge nearest the operator, allowing it to run back and forth with the same adjustment until exhausted along that strip; then shift the ribbon forward with the width of one letter, running until exhausted, and so on. Finally, when the whole ribbon is exhausted the color will have been equally used up, and on re-inking the work will appear even in color, while it will look patchy if some of the old ink has been left here and there, and fresh ink applied over it.

The following formula may also be used to make a typewriter ink:

Transparent soap.....	av.oz. 1
Glycerin	fl.oz. 4
Water	fl.oz. 12
Alcohol	fl.oz. 24
Aniline color.....	sufficient

Dissolve the soap in the water and glycerin by the aid of heat; dissolve the aniline color in the alcohol and mix the solution. If the ink is too soft, add more soap.

For the aniline color, use any suitable coal tar dye.

Ink for Writing on Celluloid.

The following is recommended:	
Iron chlorid, dry.....	dr. 3
Tannin	dr. 4½
Acetone	fl.oz. 4

Dissolve the chlorid and tannin each in a portion of the acetone, then mix the solutions.

Any pen may be used with this liquid. Do not write on visible parts of the object as the ink is difficult to remove.

Ink for Writing on Photographs.

The following produces an ink serviceable for marking "proofs;" the writing being done on a dark portion, the

lines soon, bleach by the conversion of the silver into an iodid:

Potassium iodid.....	av.oz.	1
Iodin	gr.	45
Gum arabic	gr.	45
Water	fl.oz.	3

Ink for Writing or Etching on Metals.

I. The most simple compound for writing on metals such as tin or zinc is a mixture of ordinary shellac-varnish with lampblack. The latter should be rubbed in a mortar with a little of the varnish until the mixture has become perfectly smooth and homogeneous, when it may be diluted with enough of the varnish to make it of the proper consistence. This mixture will produce dead black writing. If lustrous writing is desired, the shellac should be dissolved in oil of turpentine.

II. An ink for this purpose may also be made by making a solution of 72 grains copper sulfate in 3 fluidounces of distilled water, and adding 9 drops of hydrochloric acid. A little mucilage should also be added. And in order to be able to see the writing at once, a little pyrogallic acid may be added. For writing with this ink, a copper pen must be used.

INK POWDERS OR EXTRACTS.

Ink powders or extracts are dry preparations intended for the extemporaneous manufacture of ink by treatment with water. Boiling distilled water must be used for solution as this prevents moulding of the ink. These powders are of similar composition to inks, and there are therefore aniline, logwood and nutgall ink powders and these may make copying or non-copying inks of different colors.

Aniline Ink Powders.

In preparing ink from these powders, add to the material mentioned in the formula, 16 fluidounces of boiling distilled water and stir with a wooden spatula until all is dissolved. Avoid metallic vessels in dissolving the powder.

If the extracts are intended for counter sale, the mixture should be wrapped in parchment paper.—D.

I. For black writing ink:

Phenol black B.....	dr.	2½
Sugar	dr.	2½
Potassium bisulfate.....	gr.	8

Mix well by trituration.—D.

II. For blue copying ink:

Resorcin blue M.....	gr.	75
Sugar	gr.	75
Oxalic acid.....	gr.	15

Mix well by trituration.—D.

III. For blue writing ink:

Resorcin blue M.....	gr.	40
Sugar	dr.	2½
Oxalic acid	gr.	8

Mix well by trituration.—D.

IV. For red copying ink:

Eosin A, yellowish.....	dr.	3
Sugar	av.oz.	½

Mix well by trituration.—D.

V. For red writing ink:

Eosin A, yellowish.....	gr.	110
Sugar	av.oz.	½

Mix well by trituration.—D.

VI. For violet copying ink:

Methyl violet 3 B.....	dr.	2½
Sugar	gr.	75
Oxalic acid	gr.	15

Mix well by trituration.—D.

VII. For violet writing ink:

Methyl violet 3 B.....	gr.	75
Sugar	gr.	75
Oxalic acid.....	gr.	15

Mix well by trituration.—D.

Logwood Ink Powders.

In preparing ink from these powders, add 16 fluidounces of boiling distilled water to the mixture mentioned in the formula, stir for 10 minutes with a wooden spatula, allow to cool, set aside for 3 days in a cool place, and decant to clear liquid from the sediment. Avoid metallic vessels in dissolving these powders.—D.

VIII. For red copying ink.

Logwood extract, best.....	dr.	12
Potassium oxalate, neutral...	dr.	5
Aluminum sulfate.....	dr.	5
Potassium bisulfate.....	dr.	2½
Salicylic acid.....	gr.	24
Potassium bichromate.....	gr.	12

Reduce to a coarse powder and mix them.—D.

IX. For violet copying ink:

Logwood extract, best.....	dr. 12
Aluminum sulfate.....	dr. 5
Potassium oxalate, neutral.....	av.oz. 1
Potassium bisulfate.....	gr. 75
Potassium bichromate.....	gr. 40
Salicylic acid.....	gr. 12

Reduce all to coarse powder and mix.—D.

X. For writing ink:

Logwood extract.....	dr. 8½
Chrome alum.....	dr. 6
Oxalic acid.....	gr. 72
Potassium bichromate.....	gr. 15
Salicylic acid.....	gr. 10

Reduce all to coarse powder and mix.—D.

Nutgall or Tannin Ink Powders.

In preparing ink from these powders, add 20 fluidounces of boiling distilled water to the mixture mentioned in the formula, allow the mixture to boil for 25 or 30 minutes, then cool, transfer to a bottle, tie over the latter with paper, set aside in a cool place (in a cellar) for 3 or 4 weeks, and then decant the clear liquid from the sediment. If necessary, the several weeks storing may be dispensed with and the liquid used as soon as the solid matter has subsided.

The main ingredients of these powders is "oxidized tannin" which is prepared as follows:

Oxidized Tannin.

Tannic acid.....	av.oz. 10
Potassium bisulfate.....	av.oz. 3
Muriatic acid, commercial.....	fl.oz. 1
Distilled water.....	fl.oz. 15

Dissolve the tannic acid in the water in a flask by the aid of a gentle heat, add the potassium bisulfate, first rubbed to a powder, and the acid, and heat on a water bath to a temperature of 80 to 90° C. for at least 10 hours, then remove the contents of the flask by means of water, transfer it to a porcelain capsule, and evaporate on a water bath to dryness.

The product weighs approximately 13 av. ounces.—D.

XI. For alizarin copying ink:

"Oxidized tannin".....	av.oz. 1¼
Ferrous sulfate, exsiccated.....	gr. 290
Sugar.....	gr. 290
Indigotin.....	gr. 40
Aniline green D.....	gr. 25
Salicylic acid.....	gr. 8

—D.

XII. For alizarin non-copying ink:

"Oxidized tannin".....	gr. 365
Ferric sulfate, dry.....	gr. 290
Sugar.....	dr. 2½
Indigotin.....	gr. 30
Aniline green D.....	gr. 20
Salicylic acid.....	gr. 8

—D.

XIII. For black copying ink:

"Oxidized tannin".....	av.oz. 1¼
Ferrous sulfate, exsiccated.....	gr. 290
Sugar.....	gr. 290
Phenol black B (coal tar dye).....	gr. 75
Salicylic acid.....	gr. 8

—D.

XIV. For black non-copying ink:

"Oxidized tannin".....	gr. 365
Ferric sulfate, dry.....	gr. 290
Sugar.....	dr. 2½
Phenol black B (coal tar dye).....	dr. 1
Salicylic acid.....	gr. 8

—D.

XV. For blue copying ink:

"Oxidized tannin".....	av.oz. 1¼
Ferrous sulfate, exsiccated.....	gr. 290
Sugar.....	5
Phenol blue 3 F (coal tar dye).....	gr. 24
Salicylic acid.....	gr. 8

—D.

XVI. For blue non-copying ink:

"Oxidized tannin".....	gr. 365
Ferric sulfate, dry.....	gr. 290
Sugar.....	dr. 2½
Phenol blue 3 F (coal tar dye).....	gr. 24
Salicylic acid.....	gr. 8

—D.

XVII. For greenish-blue copying ink:

"Oxidized tannin".....	av.oz. 1¼
Ferrous sulfate, exsiccated.....	gr. 290
Sugar.....	5
Phenol blue 3 F (coal tar dye).....	gr. 15
Aniline green D.....	gr. 40
Salicylic acid.....	gr. 8

D.

XVIII. For greenish-blue non-copying ink:

"Oxidized tannin".....	gr. 365
Ferric sulfate, dry.....	gr. 290
Sugar	dr. 2½
Phenol blue 3 F (coal tar dye)	gr. 12
Aniline green D.....	gr. 20
Salicylic acid	gr. 8
—D.	

XIX. For green copying ink:

"Oxidized tannin".....	av.oz. 1¼
Ferrous sulfate, exsiccated.....	gr. 290
Sugar	dr. 5
Aniline green D.....	gr. 40
Salicylic acid	gr. 8
—D.	

XX. For green non-copying ink:

"Oxidized tannin".....	gr. 365
Ferric sulfate, dry.....	gr. 290
Sugar	dr. 2½
Aniline green D.....	gr. 40
Salicylic acid	gr. 8
—D.	

XXI. For red copying ink:

"Oxidized tannin".....	av.oz. 1¼
Ferrous sulfate.....	gr. 290
Sugar	dr. 5
Ponceau R R (coal tar dye)	dr. 1
Salicylic acid	gr. 8
—D.	

XXII. For red non-copying ink:

"Oxidized tannin".....	gr. 365
Ferric sulfate, dry.....	gr. 290
Sugar	dr. 2½
Ponceau R R (coal tar dye)	gr. 40
Salicylic acid.....	gr. 8
—D.	

XXIII. For violet copying ink:

"Oxidized tannin".....	av.oz. 1¼
Ferrous sulfate, exsiccated.....	gr. 290
Sugar	dr. 5
Phenol blue 3 F.....	gr. 16
Ponceau R R	gr. 24
Salicylic acid	gr. 8

"Phenol blue" and "ponceau" are coal-tar dyes.—D.

XXIV. For violet copying ink:

"Oxidized tannin".....	gr. 365
Ferric sulfate, dry.....	gr. 290
Sugar	gr. 145
Phenol blue 3 F.....	gr. 12
Ponceau R R.....	gr. 16
Salicylic acid	gr. 8

"Phenol blue" and "ponceau" are coal-tar dyes.—D.

XXV. Another and simpler formula is this:

Nutgall, powder.....	gr. 280
Ferrous sulfate, dried.....	gr. 140
Copper sulfate, dried.....	gr. 7
Gum arabic	gr. 20

Boil this with a pint of soft or distilled water for about 10 minutes.

INK ERASIVES.

Fresh ink spots are removed with comparative ease; old spots, especially after passing repeatedly through the laundry, are usually extinguished with considerable difficulty. The ink erasives are intended for the removal of ink spots from paper as well as from fabrics.

I. The following composition will remove ink or writing fluids from paper, cloth, etc.:

No. 1.

Citric acid.....	av.oz. 2
Water	fl.oz. 16
Saturated aqueous solution of borax	fl.oz. 3 or 4

Dissolve the acid in the water and add the borax solution.

No. 2.

Chlorinated lime.....	av.oz. 6
Water	fl.oz. 16
Saturated aqueous solution of borax	fl.oz. 3 or 4

Mix the lime and water, shake well, set aside for 1 week in a well stoppered bottle, decant the clear liquid, and add the borax solution.

This composition is used by saturating the ink spot with solution No. 1, removing excess of liquid with a blotter, and then applying solution No. 2. When the stain has disappeared, apply the blotter, and wash the spot by the alternate use of clear water and blotting paper.

Ink destroyed in such a manner cannot well be brought to view again by chemicals.

II. Take of chlorinated lime 4 av. ounces, thoroughly pulverized, and 32 fluidounces distilled water. Shake well and set the mixture aside for 24 hours, in order to dissolve the lime, then strain

through a cotton cloth, after which add 2 fluidounces of acetic acid to every pint of chlorinated lime water.

This eraser is used by reversing the penholder in the hand, dipping the end of the reversed penholder into the fluid and applying it without rubbing, to the word, figure or blot required to be erased. When the ink has disappeared absorb the fluid with a blotter, and the paper is immediately ready to write upon again.

This formula was patented in 1872.

III. Treat the stain with stannous chlorid to reduce the ferric salt to the ferrous condition and then treat with oxalic acid solution.

IV. A mixture of equal parts of oxalic and tartaric acids has been recommended. When needed for use dissolve a small amount in water and apply to the spots.

V. Stretch the goods over a hot dinner plate, moisten with hot water, then rub in with the bowl of a spoon a mixture of equal parts of potassium bitartrate and citric acid, rubbing until the spot disappears.

VI. Dip the goods in hot water, rub the spots with crystals of oxalic acid; then soak in a 1:16 chlorinated lime solution, and, as soon as the stain disappears, rinse repeatedly in plenty of water. This requires great care.

VII. Rub tallow over the ink spots, then wash in a solution of pyrophosphate of sodium until both the tallow and ink have disappeared. The result depends on the reducing action of the pyrophosphate, which is perfectly harmless.

VIII. Moisten with hydrogen peroxid solution. This acts similarly to stannous chlorid and iron pyrophosphate.

IX. As many black inks of the present day contain nigrosin, a method for its removal is included. Make a paste of chlorinated lime with cold water,

and rub a little of this over the ink spot with a wooden paddle. Next pour on a little vinegar or diluted acetic acid and continue to rub with the paddle. Lastly, rinse thoroughly with plenty of clear water. The operation may have to be repeated, provided the fabric and the color can withstand such treatment.

Ink Erasing Pencil.

Pumice stone.....	av.oz. 14
Sandarac	av.oz. 2
Tragacanth	av.oz. 1
Dextrin	av.oz. 1

Mix all of the above in fine powder, add enough mucilage of acacia to form a pill mass, roll out into a pill pipe, and divide these into pencils 2 inches long. Dry and wrap in tin-foil. These are to be used like rubber erasers.—D.

INK STAINS, To Remove.

For removing stains of writing ink, see Ink Erasers, for removing stains of indelible ink, see Silver Nitrate stains, To Remove.

INSECT DESTROYERS.

Insect destroyers are mentioned under the heading Ant Exterminators, Bedbug Exterminators, Buffalo Moths, Caterpillar Lime, Flea Exterminators, Fly Exterminators, Gophers, Extermination of, Insect Powders, Insects in Books, Insects in Drugs, Insecticides for Plants, Mosquito Exterminators, Moth Destroyers and Preventives, Phosphorus Pastes, Roach Exterminators, and Croton Bug Exterminators.

The following preparations could not very well be classed elsewhere hence a separate heading is made for them. They may be used against a variety of insects.

I.

Resin	av.oz. 1
Oil of amber, crude.....	fl.oz. 1
Gasoline	gall. 1

II.

Sodium borosalicylate	dr. 2½
Decoction of quassia.....	fl.oz. 16

This bitter solution, in Germany known as "liquor insecta fugans," is

claimed to be one of the very best applications to ward off biting insects of any kind.—H.

Hager's method of making sodium borosalicylate is as follows: Triturate together 20 parts of borax, 55 parts of salicylic acid and 9 parts of sodium bicarbonate until the mixture is converted into a pasty mass. Now incorporate 150 parts of 70% alcohol and evaporate on a water-bath, with constant stirring to dryness. If for the 70% alcohol specified, 100 parts of 90% alcohol be used, the product will be whiter and the operation will proceed more rapidly. The product equals 60 parts.

III. The following preparation is known as "tincture of insect flowers."

Insect powderav.oz. 3
Alcoholsufficient
Make 10 fluidounces of tincture.

It may be applied as a preventive of insect stings; it may also be used, when mixed with an equal volume of alcohol, as a spray for the destruction of flies.—D. modified.

An ethereal tincture may be prepared in a similar manner, using spirit of ether as a menstruum. It is to be used like the preceding.—D.

Parasiticide Liquids.

The parasiticide liquids may be prepared as follows.

I. Liquor Naphthalini Benzinatus:

Naphthalinav.oz. 3
Chloroformfl.oz. 4
Benzinfl.oz. 11½

Mix at a temperature between 18 and 20° C., and shake until solution has been effected.

II. Liquor Naphthalini Sulphocarbonatus:

Naphthalinav.oz. 6
Chloroformfl.oz. 10½
Carbon disulfid.fl.oz. 7
Prepare like No. I.

For use in a more fluid form, either of these liquids is to be properly diluted; the following being a good formula:

Common family soap, dry.av.oz. ½
Castile soap, dry.....av.oz. ½
Waterfl.oz. 18
Alcoholfl.oz. 11
Liquor naphthalini benzinatusfl.oz. 3

Dissolve the soaps in the water and alcohol, previously mixed, allow the liquid to become cold, and then add the naphthalin solution. Before using the liquid, shake it thoroughly.

If an ointment is required, 8½ av. ounces of petrolatum and 1½ av. ounces of ceresin are melted together, and before the mass sets 18 fluidounces of the liquor naphthalini benzinatus are to be mixed with it.

If either of these is to be used as a parasiticide upon animals, it should be applied with a stiff brush, in quantity only large enough to moisten the skin or to render the hair or fur slightly glossy. Under all circumstances it is preferable to avoid using these compounds at night time, as accidents may occur by approach to or contact with flames.

IV. A patented insecticide (1885) is composed of carbolic acid, 2 ounces, quassia, 12½ pounds, Carolina tar, 5 pints, zinc sulfate, 10 ounces, and water, 25 gallons. This is directed to be sprayed upon carpet linings.

INSECT POWDERS, Compounded.

These are powdery mixtures which are used in place of ordinary insect powder. They may also be used instead of liquid insecticides.

I.

Insect powder.....av.oz. 14
Quassia, fine powder.....av.oz. 6

II.

Insect powder.....av.oz. 14
Quassia, fine powder.....av.oz. 4
Naphthalinav.oz. 2

III.

Insect powder.....av.oz. 8
Borax, powder.....av.oz. 8
Oil of cedarfl.oz. 1
Oil of pennyroyal.....fl.dr. 2

IV.

Insect powder.....av.oz. 8
Boraxav.oz. 8

Sulfurav.oz. 4
 Oil eucalyptus.....fl.dr. 2
 This is excellent for cockroaches.

V.

Paris green.....av.oz. 2
 Plaster of Paris.....av.oz. 2
 Borax, powder.....av.oz. 12
 German chamomile.....av.oz. 1

Powder the chamomile flowers and mix with the other powders.

This is said to be used by professional bug exterminators.

VI.

Tobacco dust (or Scotch snuff)av.oz. 12
 Sulfurav.oz. 8
 Insect powder.....av.oz. 8
 Naphthalinav.oz. 2
 Oil of cedar.....fl.oz. 1
 Chalk, to make.....av.lb. 4

VII. Another insecticide is described as having this composition:

Insect powder.....parts 33
 Boraxparts 48
 Glucose, sugar, or other saccharine substances.....parts 12
 Flour (preferably rice flour)parts 7

It is very alluring to all forms of insect life and has the advantage of being entirely non-poisonous to human beings and domestic animals.

INSECTS IN BOOKS, To Prevent.

The following has been recommended: Mix 3 parts of camphor and 1 of carbolic acid, dissolve by gentle heat and add an equal volume of sweet oil.

Moisten a cloth with the liquid and go lightly over the covers and edges of the book.

INSECTS IN DRUGS.

According to the U. S. Department of Agriculture, the principal insect found in drug stores is what is called the "drug-store beetle" (*Sitodrepa panicea* Linne). According to the Department pamphlet "in pharmacies this insect runs nearly the gamut of everything kept in store, from insipid gluten wafers to such acrid substances as wormwood, from the aromatic cardamom and anise to the deadly aconite and belladonna. It is particularly abundant in roots,

such as orris and flag and sometimes infests cantharides." But not alone does it attack drugs but it invades mills, granaries, tobacco warehouses, etc. It enters the household and is often found in flour, meal, breakfast foods, and condiments. It is partial to red pepper and occurs in ginger, rhubarb, chamomile, boneset, and other roots and herbs that were kept in the farmhouse in olden days. It sometimes gets into dried beans and peas, chocolate, black pepper, powdered coffee, licorice, peppermint, almonds, and seeds of every description.

It must be remembered that it is not the beetle itself that does the harm but it is the larva or grub hatched out from the egg laid by the mature beetle that bores into all manner of roots, herbs, meals, etc., and ruins them for all purposes.

Through an extended series of investigations made at the University of Kansas, it was ascertained that a number of other insects infest drugs, various ticks, mites, etc., for example.

An excellent manner of destroying all insects in drugs is by means of chloroform. A small amount is to be poured into the container containing the infested drugs. The chloroform, if used prior to infestation, will also prevent the attacks of insects. It is therefore a wise policy to add a few drops of chloroform to the container for rhubarb, cantharides, and other drugs which are so frequently worm-eaten. The chloroform does no harm to the drugs as upon a few moments exposure to the air, it is entirely dissipated.

Chloroform poured on pressed herbs in packages and similar articles will destroy all the worms.

INSECTICIDES FOR PLANTS.

Under this heading are mentioned various remedies used by farmers, gardeners, florists, and others against different kinds of worms, bugs, and various insects and fungi which attack and destroy plants and trees.

The formulas, directions, hints, etc., here given are taken from the reports of the U. S. Department of Agriculture and of various State agricultural experiment stations, and are to be considered as entirely trustworthy.

For remedies to combat the fungous diseases of trees, see under heading Fungicides.

Kerosene as an Insecticide.

Kerosene is an excellent insecticide, destroying all kinds of insects feeding on plants but in an undiluted form it is too caustic, destroying the delicate plant parts. Various mixtures containing kerosene in an emulsified form have been used with success, among them the following:

Riley Hubbard Kerosene Emulsion:

This insecticide acts by contact, and is applicable to all non-masticating insects (sucking insects, such as the true bugs, and especially plant lice and scale insects), and also to many of the mandibulate insects when the use of arsenites is not advisable. Kerosene emulsion may be made by means of various emulsifying agents, but the most satisfactory substances, and those most available to the average farmer and fruit-grower, are milk and soapsuds. In each of these cases the amount of emulsifying agent should be one-half the quantity of kerosene.

One of the most satisfactory formulas is as follows:

Kerosene	gall. 2
Common soap or whale-oil soap	av.oz. 8
Water	gall. 1

Dissolve the soap in the water by the aid of heat, and add the solution boiling hot to the kerosene. Churn the mixture by means of a force pump and spray nozzle for 5 to 10 minutes. The emulsion, if perfect, forms a cream which thickens upon cooling, and should adhere without oiliness to the surface of glass. No free oil should rise from surface of the liquid, as this would injure the foliage.

For use against scale insects, dilute one part of the emulsion with 9 parts of water. For most other insects, dilute one part of the emulsion with 15 parts of water. For soft insects, like plant lice, the dilution may be carried to from 20 to 25 parts of water. For most insects the proper dilution is with 15 parts of water. This liquid should be applied by force and enough used to thoroughly wet the insects.

Kerosene Emulsion (milk formula):

Kerosene	gall. 2
Sour milk	gall. 1

Heating is unnecessary, the two being churned together. The change is from a watery liquid to a thick, but-tery consistency, which takes place very suddenly after 3 to 5 minutes agitation. With sweet milk, difficulty will be experienced, and if the emulsion does not result in 5 minutes, the addition of a small amount of vinegar will produce the result promptly. It is better to prepare the milk emulsion from time to time for immediate use, unless it can be stored in air-tight jars; otherwise it will ferment and spoil within a week or two.

Instead of kerosene, crude petroleum oil may be used, Beaumont oil being the kind used by the Department. The emulsion is directed to be prepared in this wise:

Crude petroleum	gall. 2
Water	pints 4
Hard soap	av.oz. 8

Dissolve the soap in the water (soft) with the aid of heat; to this add the petroleum, mix with a spray pump or shake vigorously, and dilute with the desired amount of water. Soap containing an amount of free alkali equivalent to 9/10% of sodium hydroxid gives the best emulsion. All of the laundry soaps examined by the Department were quite satisfactory but toilet soaps were usually not suitable.

Arsenical Insecticides.

These poisons (Paris green or London purple) are of the greatest serv-

ice against all mandibulate insects, as larvæ and beetles, and they furnish the most satisfactory means of controlling most leaf-feeders, and the best whole-sale remedy against the codling moth. Caution must be used in applying them on account of the liability of burning or scalding the foliage.

The poisons should be thoroughly mixed with water at the rate of from 1 pound to 100-250 gallons of water, and applied with a force-pump or hand spray-nozzle. In preparing the wash it will be best to first mix the poison with a small quantity of water, making a thick batter, and then dilute the latter and add to the reservoir or spray-tank, mixing the whole thoroughly. When freshly mixed, either London purple or Paris green may be applied to apple, plum and other fruit trees (except the peach) at the rate of 1 pound to 150-200 gallons, the latter amount being recommended for the plum, which is somewhat more susceptible to scalding than the apple. White arsenic does little if any injury at the rate of 1 pound to 50 gallons of water. It has been shown, however, that when allowed to remain for some time (two weeks or more) in water the white arsenic acts with wonderful energy, scalding when used at the rate of 1 pound to 100 gallons from 10 to 90% of the foliage. The action of the other arsenites remains practically the same, with perhaps a slight increase in the case of London purple.

With the apple, in spraying for the codling moth, at least two applications should be made—the first on the falling of the blossoms, the apples being about the size of peas, and the second a week or 10 days later—but the poison should never be applied after the fruit turns down on the stem, on account of the danger of the poison collecting and remaining permanently in the stem cavity.

For the plum curculio on the plum, cherry, peach, etc., two or three applications should be made during the latter part of May and the first half of June. In the case of most leaf-feeders, spray on the first indication of their presence.

The following formula may also be employed:

Paris green or London	
purple	av.oz. 3 to 4
Fresh lime.....	av.oz. 8
Flour.....	av.oz. 16
Water	gall. 45

Shake the lime in a gallon of water and rub till smooth; then strain and stir in the arsenite. Boil the flour to a thin paste. Dilute the arsenite with the necessary water, then add the flour paste and use. This is the standard remedy for all kinds of leaf-gnawing insects. A good sample of London purple is just as effective as Paris green, and usually costs less. The lime is added to neutralize any soluble arsenite compounds, and the flour is used to make the arsenite adhere better to the foliage.

With the peach, these poisons, when applied alone, even at the rate of 1 pound to 300 or more gallons of water, are injurious in their action, causing the loss of much of the foliage.

By the addition of a little lime to the mixture, London purple and Paris green may be safely applied at the rate of 1 pound to 125 to 150 gallons of water to the peach of the tenderest foliage, or in much greater strength to strong foliage, such as that of the apple or most shade trees.

Whenever, therefore, the application is made to tender foliage, or when the treating with a strong mixture is desirable, lime water, (milky, but not heavy enough to close the nozzle) should be added at the rate of about 2 gallons to 100 gallons of the poison.

Pure arsenic, however, should never be used with lime, as the latter increases its action.

Other arsenicals that may be used are arsenite of lime, arsenate of lead, and copper arsenite. The latter may be used in place of Paris green as it is the pure arsenite whereas Paris green is an indefinite mixture of acetate and arsenite of copper.

Arsenite of lime may be prepared according to Kedzie's formula:

White arsenic.....	av.lb. 1
Sal soda, crystal.....	av.lb. 4
Water	gall. 1

Boil the arsenic and soda in the water for 20 minutes or until dissolved. Add enough water to make up for the loss by evaporation. This stock mixture will keep indefinitely. For ordinary spraying operations, add 1 pint of this mixture to 40 gallons of water in which has been previously mixed about 3 pounds of freshly slaked lime. The soda is used to hasten the process and to insure the combination of all the arsenic with the lime.

Arsenate of lead is prepared by combining approximately 3 parts of crystallized sodium arsenate with 7 parts of crystallized lead acetate in water. It may be used in strength of 3 to 15 pounds (meaning the combined weights of the two chemicals) to 100 gallons of water without injury to the foliage and in this respect is much safer on delicate plants than any other arsenical.

White Hellebore as an Insecticide.

Powdered white hellebore (*Veratrum album*) is often recommended and used as an insecticide, particularly as a substitute for arsenicals. This substance is useful when a few plants only are to be sprayed, as in yards or small gardens but it is too expensive for large operations. It kills insects in the same way as the arsenicals, as an internal poison, and is less dangerous to man and the higher animals, but if sufficient be taken it will cause death. It is particularly effective against the larvæ of sawflies, such as the cherry slug, rose slug, currant worms, and strawberry worms. It may be applied as a

dry powder, preferably diluted with from 5 to 10 parts of flour and dusted on the plants through a muslin cloth or with a powder bellows. The application should be made in the morning when the plants are moist with dew. Used as a wet application, it should be mixed with water in the proportion of one ounce to the gallon of water and applied as a spray.

INTENSIFYING SOLUTIONS for Photography.

I. Lumiere's iodid intensifier:

Mercuric iodid.....	gr. 90
Sodium sulfite, dried.....	av.oz. 2
Distilled water, to make.....	fl.oz. 10
Mix and dissolve.	

This can be dissolved immediately after the negative has been fixed and rinsed.

II. Monckhoven's intensifier:

Mercuric chlorid.....	gr. 90
Potassium bromid.....	gr. 90
Distilled water.....	fl.oz. 10

In this immerse the negative till bleached, wash well, and immerse till blackened, in the following:

Silver nitrate.....	gr. 60
Potassium cyanid.....	gr. 180
Distilled water.....	fl.oz. 10

Dissolve the two salts separately in half the water, then add the cyanid solution slowly to the silver solution, shaking thoroughly after each addition until the white precipitate first formed is nearly, but not quite, dissolved.

III. Bromid of copper intensifier:

Copper sulfate.....	gr. 249
Potassium bromid.....	gr. 236
Distilled water.....	fl.oz. 10

Dissolve each salt separately in half the water, mix the two solutions, and filter.

The negative must be free from hypo and then immersed, in daylight, in the solution, and after well washing should be redeveloped with any developer such as metol or hydroquinone, but not with pure pyro and ammonia. If very great intensification is required, only rinse the negative and flow over it a 10%

solution of silver nitrate, and wash thoroughly.

IODOFORM, Removing Odor of.

Various methods of removing the odor of iodoform from hands, mortars, etc., are recommended. To remove from a mortar wash the latter with soap and water, dry it, and then burn some alcohol in it.

Another method recommended is to rub out the vessel with sawdust, wash it with hot water and soap, then rub out with linseed meal, and finally remove the linseed with water.

Still another method recommended for removing the odor from the hands utensils, etc., is to rub with a small quantity of tannic acid, then wash in the usual manner.

IVORY, Bleaching of.

A prominent manufacturing firm recommends the following two methods for bleaching ivory:

I. Wash the ivory with a 3% solution of sodium perborate, then wipe off with lemon juice or solution of citric acid.

II. Wash the ivory alternately with a 2% solution of sodium perborate and a 1% solution of oxalic acid, allowing the ivory to remain in each solution about half an hour. Repeat the process a number of times, then rinse with water and wipe dry.

It may be necessary, after bleaching the ivory, to repolish it. This may be done by applying any white polishing paste with a woolen cloth, washing with castile soap, drying, and then rubbing with a chamois skin.

IVORY, To Color.

See Horn and Ivory, to Color Black, also the following:

I. Black:

Boil first in a decoction of logwood and immerse for a short time in a solution of iron sulfate. Or wash in an alkaline solution such as ammonia water, then steep in a neutral solution of silver nitrate, and expose to the light.

II. Blue:

Steep in a solution of soluble blue.

III. Green:

Steep in a solution of verdigris in diluted acetic acid.

IV. Purple:

Boil the ivory in a decoction of logwood, then for every pint of decoction add $\frac{1}{2}$ av. ounce of alum, and boil in this mixture.

V. Red:

Dip the ivory in a weak solution of nitric acid and then place in solution of carmine or cochineal coloring N. F. Or, boil the ivory with 3 av. ounces of Brazil wood and 2 pints of water, then add 1 av. ounce of alum, and boil once more.

VI. Yellow:

Steep for some hours in a solution of lead acetate, then dry, and put into a solution of potassium bichromate. Or boil for one hour in a solution made of 2 av. ounces of alum in 1 pint of water, then steep in a decoction of 4 av. ounces of turmeric in 1 pint of water; lastly mix the two solutions and boil therein for one hour.

JAPANS.

The following are given as good formulas for the preparations known by this name:

I.

Asphaltumav.oz. 8
Balsam of copaiba.....av.oz. 8
Oil of turpentine.....sufficient

Melt the asphaltum over a direct fire, add the balsam, previously warmed, allow to cool somewhat, and then incorporate enough of turpentine to bring the mixture to the proper consistency.

II. Rub lampblack to a very fine condition with a little oil of turpentine, then add enough copal varnish.

III.

Asphaltumav.oz. $\frac{3}{4}$
Burnt umberav.oz. 2
Boiled linseed oil.....fl.oz. 32
Oil of turpentine.....sufficient

Melt the asphaltum, stir in the lin-

seed oil, previously heated, then add the umber, and, when cooling, thin with oil of turpentine.

JAVELLE WATER.

This may be prepared as follows:

Sodium bicarbonate.....av.oz. 32
Chlorinated limeav.oz. 8
Waterfl.oz. 64

Boil the sodium salt in the water for a few minutes, add the chlorinated lime, allow to cool, and then strain.

JEWELER'S ROUGE. (Colcothar—Crocus Martis.)

This is usually prepared by heating ferrous sulfate to a high temperature, but a simpler method is this:

Make a tolerably strong solution of ferrous sulfate, also one of oxalic acid, filter each; add the former to the latter, with constant stirring, let stand a few hours, collect the precipitate, wash it thoroughly with water, dry, and expose to the direct flame until there is no further change of color.

KEROSENE, To Mask Odor of.

The odor of kerosene may be removed by purifying in the same as benzine is purified in the U. S. P. process. To disguise or mask various strong-smelling substances are recommended but the best is said to be 1% of amyl acetate. This is said to make an aromatic liquid which burns with a bright, clear light.

KNIFE HANDLES, To Fasten.

When the handle of a case knife, spatula or other article of this kind gets loose, it may be made tight again by the following process: Melt together 12 parts of rosin and 3 of sulfur and stir in 5 parts of iron filings; pour the mixture while hot into the cavity, insert the tang, and let cool slowly. The tang should be heated slightly as it insures a firmer joint with the molten mass.

The following cement is also recommended:

Rosinparts 4
Yellow waxpart 1
Plaster of Paris.....part 1

Melt rosin and wax, incorporate the plaster, and use this cement while hot

LABEL VARNISH.

See under the heading Varnishes.

LACQUERS.

These are solutions of resinous substances, generally in alcohol, but wood or denatured alcohol may be used instead. They are used generally as protective coatings for metals to prevent the oxidizing effects of the atmosphere. They may be colored or tinted, the coloring substances being usually also resinous substances such as dragon's blood.

See also the Varnishes which are similar preparations.

Lacquers for Brass.

Before applying any lacquer to brass, it must be well cleaned. This may be done by immersing in a bath of strong solution of caustic potash or lye, followed, after rinsing, by a bath of dilute nitric acid. Then rinse with water, rub dry, and then place on a hot iron plate or on top of the stove, until warm. Then apply the lacquer with a soft brush (camel's hair or sable), making all the strokes in one direction. Some practice is necessary in order to obtain a nice, even coating.

Dark Lacquer for Brass.

I.

Turmeric, powder.....av.oz. 2
Annattoav.oz. ½
Saffron, Spanish.....av.oz. ½
Shellacav.oz. 6
Alcoholfl.oz. 30

Macerate all together for several days, agitating frequently, then strain or filter.

Wood or denatured alcohol may be substituted for the alcohol.

II.

Shellacav.oz. 3
Turmeric, powder.....av.oz. 1½
Aloes, powder.....dr. 4
Masticdr. 2
Dragon's blood, powder....dr. 2
Venice turpentine.....dr. 1
Alcoholfl.oz. 30

Mix, macerate for several days, agitating frequently, and strain or filter.

III.

Seed lacav.oz. 3
 Turmeric, powder.....av.oz. 1
 Dragon's blooddr. 2
 Alcoholfl.oz. 16
 Mix, macerate for several days, agitating frequently and filter.

Gold Lacquer.

IV.

Shellacav.oz. 2
 Dragon's blood, powder.....dr. 4
 Turmeric, powder.....dr. 1
 Wood alcoholfl.oz. 32
 Mix, macerate for several days, preferably in a warm place, agitate frequently, and strain or filter.

This is said to be used in Germany. It is said to be useful to impart a gold tint to tin and other white metals.

V.

Masticav.oz. ½
 Sandaracav.oz. ¾
 Venice turpentine.....av.oz. 1½
 Shellacav.oz. 3
 Alcoholfl.oz. 30
 Fuchsinav.oz. 1
 Aniline violetav.oz. ½

VI.

Seed lacav.oz. 2
 Ambergr. 90
 Gambagegr. 45
 Saffron, Spanishgr. 10
 Red saunders, powder.....dr. 2½
 Dragon's blood, best.....av.oz. ½
 Glassav.oz. 1
 Alcoholfl.oz. 17

Reduce all the resins to coarse powder by beating in a mortar with the glass, then add the other ingredients, macerate for a number of days, and finally allow the solids to subside, decant the clear liquid, and strain or filter the latter.—H.

Red Lacquer for Brass.

VII.

Sandaracav.oz. 4
 Annattoav.oz. 2½
 Dragon's blood, powder...av.oz. 1
 Oil of turpentine.....fl.oz. 2
 Alcoholfl.oz. 16
 Mix, macerate for several days, agitating frequently, then strain or filter.

VIII.

Seed lacav.oz. 5
 Sandaracav.oz. 2

Masticav.oz. 2
 Venice turpentine.....av.oz. 1½
 Red saunders.....av.oz. ¾
 Gambageav.oz. ½
 Dragon's blood, powder...av.oz. ½
 Annattoav.oz. ½
 Alcoholfl.oz. 30

Mix, macerate for several days, agitating frequently, and strain or filter. Wood or denatured alcohol may be substituted for the alcohol.

Lacquer for Leather.

See Harness Varnish or Lacquer.

Protective Lacquer.

This may be applied to any polished metal to protect it against the atmosphere:

IX.

Shellacav.oz. 1
 Sandaracav.oz. 1
 Venice turpentine.....dr. 1
 Alcoholfl.oz. 14½

Mix, macerate for several days, agitating frequently, and filter or strain.

Lacquer for Tin.

X.

Red saundersgr. 40
 Saffrongr. 80
 Dragon's blood, powder....dr. 3
 Sandaracav.oz. ½
 Masticav.oz. ½
 Balsam of firav.oz. ½
 Turmeric, powder.....av.oz. 1
 Shellacav.oz. 2
 Alcoholfl.oz. 16

Mix, macerate for several days, agitating frequently, and strain or filter.

Wood or denatured alcohol may be substituted for the alcohol.

See also Nos. IV. and IX.

LAUNDRY BLUING.

See Bluing, Liquid, and Bluing Ball.

LAUNDRY GLOSS.

See Starch or Laundry Gloss.

LAWN FERTILIZER.

See Fertilizers.

LEATHER BLACKING AND POLISH.

See Harness Blacking and Polish; Shoe Blacking, Liquid; and Shoe Blacking, Paste Form.

LEATHER-CLEANING PASTE.

This is accredited to the Marquis of Lothian's groom:

Pipe clay	av.oz. 8
Spanish white	av.oz. 4
Flake white	av.oz. 3
Precipitate chalk.....	av.oz. 2
Spermaceti	av.oz. $\frac{1}{2}$
Lard	av.oz. 4

This is said to be useful for cleaning white leather, kid, etc.

LEATHER DRESSING AND OIL.

See under Shoe Dressing, Shoe Grease, and Harness Dressing and Oil.

LEATHER DYEING.

See Dyeing of Leather.

LEATHER POLISH.

These are especially intended for chair leather:

Eggs, white and yolk.....	No. 5
Sperm oil.....	fl.oz. 6
Acetic acid	fl.dr. 6
Glycerin	fl.dr. 6
Oil of turpentine.....	fl.oz. 1
Alcohol	fl.oz. 5
Water, to make.....	fl.oz. 32

Beat up the eggs thoroughly with an egg-beater, mix the oils, acid, and glycerin, and add gradually to the eggs, using the beater constantly. Transfer to a bottle, and add the alcohol diluted with its own volume of water, adding this gradually, shaking frequently meanwhile. Finally add the remainder of the water.

A dram of birch-tar may be added to this to give it a Russia-leather odor.

The directions for use are to pour about a teaspoonful of the polish upon the chair-leather, and rub it gently over with a soft cotton rag until it is dry. A few minutes later polish gently with a clean rag.

Leather backs of chairs should be reserved until the seats are polished; then use the wet rag, sprinkling a little of the polish upon it, and finish off with the dry rag.

This polish keeps the leather soft and preserves it. It should be used about once a week. It is advisable not to color it, because leathers differ so greatly in color. For green leather the frayed parts should be touched up with green ink before using the polish; for brown

leathers a solution of Bismarck brown or liquid annatto may be used; and for crimson leathers red ink is best. The dye-tones are subdued by the polish.

LEATHER VARNISH or Lacquer.

See Harness Varnish.

LEECHES, Keeping of.

As soon as the leeches arrive from the dealer, they should be at once removed from the box and washed thoroughly in soft water which should be above 15° C. The first washing rejected, they should then be placed in a jar half-filled with water at about the same temperature, with a piece of clean muslin tied over the mouth of the jar and covered with a perforated lid. Care must be taken that the water replaced be no colder than the water thrown away. The jar should be well cleansed once or twice a week in winter and about every other day in summer, this preventing the accumulation of any foreign matter along the sides of the jar, and the leeches taken out and gently rubbed between the fingers or between the folds of a soft cloth to free their bodies of the mucous or slum substance which envelopes them. Guard also against the access of acrid vapors which may come in contact with the jar, such as ammonia gas and the vapor of mineral acids which by their density find a ready means of access through the perforated lid to become absorbed by the water in the jar.

A good authority gives the following information: Leeches secrete a large amount of mucous which absolutely requires to be removed and it is for this purpose that gravel should be placed in the leech jar. This mucous decomposes, giving rise to ammonia and other noxious products so that the water must be changed frequently. The sides of the jar must be kept free from slime by scouring. As a rule, a diseased leech will infect its companions so that as soon as it is observed it should be re-

moved to a jar by itself and the original jar cleansed and disinfected by rinsing with potassium permanganate solution.

Leeches must be kept at an even temperature ranging between 10 and 20° C.; fresh water when added should be of the same temperature; air should have free access; but light should be excluded. Vapors of ammonia, acids and benzin are injurious to leeches.

LETTERS TO GLASS, To Fasten.

See Enameled Letters, To Fasten.

LIBRARY PASTE.

See Paste, Library.

LIGHTS, TABLEAU OR BENGAL.

See Fires, Colored.

LINOLEUM, Cleaning and Polishing.

To give a clean, bright appearance to a linoleum floor, wash it well with warm soapsuds and rinse with clear, warm water until perfectly clean. As soon as the surface is dry apply a coating of equal parts of raw linseed oil and turpentine, using a wide paint brush for the application. It will be found best to apply the mixture of oil and turpentine at night, so as to allow the oil to penetrate to some extent. In the morning any surplus oil may be wiped off with old rags. The linoleum should be treated in this way about once a month. The floor should be swept with a soft floor brush, which is preferable to a broom, which is apt to scratch the surface of the linoleum and is, besides, less efficient for removing fine dust. The linoleum should be washed at least once a day with a large sponge clamped on a mop stick. Thus treated a linoleum floor surface will always look well and wear more durably.

The following is recommended as a polish for linoleum:

Yellow wax	av.oz. 1
Carnauba wax	av.oz. 2
Oil of turpentine	fl.oz. 10
Benzin	fl.oz. 10

Melt the two waxes, carefully add the oil and benzin, and stir until solid.—D.

This is used as a varnish for linoleum, oil carpet, etc.:

Yellow wax	part 1
Amber varnish	part 1
Oil of turpentine	parts 2

Melt the wax, add the oil and then the varnish.

This is to be applied by means of a woolen cloth.—D.

LINSEED, To Keep Free from Bugs.

To keep flaxseed free from bugs it has been advised to use as a container of a tin can (which may be obtained of any size up to about 100 lb. capacity) with a closely-fitting cover, and at the bottom of the can placing a small vial of chloroform with a loosely-fitting cover. Then pour in the linseed, whole or ground, into the can, covering the vial. Enough of the chloroform will escape from the bottle to kill whatever insects infest the flaxseed.

LUBRICANTS.

See Axle Greases.

LUMINOUS PAINT.

See Paint, Luminous.

MAGNESIUM LIGHTS.

See under Colored Fires for such of the fires as contain metallic magnesium.

MANIFOLD PAPER.

See Paper, Carbon or Manifold.

MARBLE BUSTS, To Clean.

First free from all dust and then wash with very weak hydrochloric acid; do not use soap.

MATHEMATICS.

To calculate the area of a circle, square the diameter, and multiply by 0.7854 (or 11-14); or multiply the diameter by the circumference, and divide by 4.

To estimate the capacity of a can or any vessel with straight sides (of the same diameter throughout), multiply the diameter by 0.7854, and this result by the height or depth of the can.

Where the vessel is larger at one end than at the other, and the sides are straight, add the ends together and

divide by 2 to get the mean diameter, and proceed as before.

To measure the cubic contents of a barrel or keg with curved staves, add the diameter at the bung and that of the head (both measured from the inner rim of the staves) together; divide by 2 to get the mean diameter; multiply as before by 0.7854, and finally multiply by the length of the stave, taken from the inside of the heads. This latter process is not absolutely mathematically correct, but is so close as to answer for all practical purposes.

MERCURY STAINS FROM SILVER, To Remove.

See Silver, To Remove Mercurial Stains from.

METAL COLORING.

See under the following headings: Bluing of Gun Barrels; Bronzing of Gun Barrels; Browning of Gun Barrels; Copper, Bluing of; Copper, Browning of; Silver, "Oxidizing" of; and Zinc, Coloring.

METAL POLISHES.

See Putz Pomades; Putz Tablets; Brass, Polishes for; Polishing Powders; Polishing Cloths; Silverware Polishes; also the following:

I.

Tripoli	av.oz. 8
Soft soap	av.oz. 4
Water, to make.....	fl.oz. 32

Rub up the tripoli with a portion of the water to a smooth paste, dissolve the soap in another portion of water, add with trituration to the tripoli paste, perfume with oil of mirbane, and add sufficient water to make one quart.

An ounce or two of oxalic acid would be a good addition. If the mixture is too thick add more water.

II.

Rosin	av.oz. 1
Whiting	av.oz. 4
Tripoli	av.oz. 4
Gasoline	fl.oz. 32

Dissolve the rosin in the gasoline and add the other ingredients.

In using avoid proximity to lights and fires.

III.

Rotten stone.....	av.oz. ½
Jeweler's rouge (crocus martis)	av.oz. 1½
Liquid petrolatum	fl.oz. 20
Mix well.	

IV.

Paraffin wax	av.oz. 2
Oleic acid, crude.....	av.oz. 4
Liquid petrolatum	av.oz. 6
Kieselguhr or precipitated silica	av.oz. 8

Melt the paraffin, add the acid and liquid petrolatum, and then incorporate the powder.

V.

Tripoli	av.oz. 6
Pumice stone, powder....	av.oz. 1
Tartaric acid.....	dr. 2
Gasoline	fl.oz. 28

METALLIC TREES.

See under Chemical Garden.

MICA IN STOVES, Cleaning of.

The mica in stove doors can readily be kept bright by rubbing with a sponge saturated with benzine, and then wiping well with a towel. Of course there should be no fire in the stove.

MICE EXTERMINATORS.

The same articles may be used for exterminating mice that are used for destroying rats. See Rat Exterminators.

MILDEW SPOTS, To Remove.

Mildew spots on white goods may in most cases be removed by a bleaching process. This may be done in a variety of ways, depending, to some extent, upon the nature and texture of the fabric. The latter should be thoroughly washed, and, while still damp, may be immersed, or touched over, with dilute Javelle water or solution of chlorinated soda or with hydrogen peroxid solution. Dilute bromin water may also be used. Sometimes a treatment similar to that used for removing ink stains is successful, treating the stains with a very concentrated solution of oxalic or citric acids, or both. In most cases it is of advantage to expose the fabric, in a damp state, to the rays of the sun.

MIRRORS, Frosting of.

Mirrors may be given a frosted effect by applying a coating of a solution of Epsom salt. Water may be used as a solvent but stale beer or ale possess adhesive properties which make it better for this purpose. The liquid is to be applied with a small, clean sponge, and allowed to dry. The liquid may be tinted if desired with whiting, carmine, Prussian blue, or other suitable substance.

MODELLING WAX, DENTAL.

See Dentists' Molding Wax.

MOLDS for Taking Impressions.

I.

Spermaceti, stearin, or tal-
lowav.oz. 8
White waxav.oz. 8
For taking impression of medals, etc.

II.

Resinav.oz. 12
Beef tallowav.oz. 8
For coarse work, such as architectural ornaments.

III. Flexible or elastic molds may be made of gutta percha softened in boiling water, and after being freed from moisture, pressed strongly against the objects to be copied.

The same can be produced by the use of gelatin or glue, which has been dissolved in sufficient hot water and passed over the object previously oiled.

MOLD IN CELLARS, To Prevent.

For this purpose the cellar walls should be often coated with whitewash. The surfaces of the casks may be painted with borax solution; for cask faucets, buckets and funnels, impregnation outside with hot paraffin and washing inside with formaldehyde solution are useful. The latter may also be used in place of sulfuring. For cask stands, cellar steps and doors, employ impregnation with copperas or bluestone solution. Formaldehyde in the proportion of 1 part of formaldehyde to 40 parts of water is an excellent washing and cleansing medium.

MOSQUITO EXTERMINATORS.

Mosquitoes are bred in pools of stagnant water, consequently the best means of preventing their propagation is by keeping pools, marshes and other low places well drained. In case this is not possible the next best plan is to throw kerosene on the stagnant pools, which should be done about every 2 weeks. Another substance which destroys mosquito larvæ is potassium permanganate.

The Daily Telegraph of London invited its readers, a few years ago, to send in the names of substances which in their experience had proven serviceable as mosquito repellants. The following were among the substances recommended:

Eucalyptol on the skin, with a handkerchief saturated with it placed on the pillow at night—the result of South African experience.

Carbolated vaseline.

One drop of oil of lavender on the pillow and one on the head at night.

Tincture of *Ledum palustre*.

Piece of absorbent cotton soaked in oil of clove on each side of the bed curtains.

Anoint the skin with a mixture of 1 part of camphor and 3 of paraffin.

Oil of eucalyptus.

Oil of eucalyptus and creosote, each 5 drops, mixed with an ounce of glycerin.

Mosquito Pastilles.

To drive mosquitoes from a room, various articles, such as camphor gum or insect powder, are sometimes burned. Good, salable articles for this purpose may be made in the form of pastilles, such as the following:

I.

Carbolic acidfl.oz. 1
Potassium nitrate, powder..av.oz. 1½
Insect powderav.oz. 3
Charcoal, powderav.oz. 6

Make a paste with powdered tragacanth and water and mold into pastilles weighing about 2 drams each.

II.

Thyme leaves	av.oz. 2
Lavender flowers	av.oz. 2
Insect powder	av.oz. 2
Potassium nitrate, powder.....	av.oz. 2
Potassium chlorate, powder....	dr. 1
Tragacanth, powder	dr. 3

Reduce the thyme and lavender to coarse powder, add the other ingredients, mix with sufficient water to form a mass, divide into pastilles, and dry.

MOTH DESTROYERS AND PREVENTIVES.

Camphor and naphthalin, the latter usually in the form of "moth balls," have been relied upon mostly as preventives against the ravages of moths. As is probably known to nearly everyone, it is not the moth itself that does the harm but its larva, which feeds on and burrows in clothing, especially such as is composed of animal tissue, wool, feathers, fur, etc. Whether or not these substances actually have any deterrent effect upon the moth or its larva is very problematical. Camphor cannot be used abundantly enough on account of its present high price, while naphthalin, though cheap enough, is objectionable to many persons on account of its odor, which clings too persistently to clothing that has been preserved with it. Numerous other expedients have been adopted to avoid, or at least mitigate, the ravages of moths. Wrapping the goods in tarred paper or paper treated with naphthalin has been tried. Cotton cloth, not being attacked by these insects, has been suggested for wrapping up the more expensive woolen and fur clothing while the latter is not in use during the summer months. Cedarwood chests are also used for storing away clothing to prevent the attack of moths. The most approved method of storing clothing to save them from moths is cold storage. This method is entirely successful, as moths do not breed or hatch at a temperature below 40° F.

In case none of these methods can be followed, the clothing, upholstered fur-

niture and other articles attacked by moths or liable to attack should, at frequent intervals, be taken out and exposed to the light, strong sunlight if possible, and be well beaten with a stick. Both light and beating are inimical to the insects, the beating dislodging the larva from their nests. To complete the work of destruction, the infested articles should be thoroughly drenched with gasoline or benzine, which absolutely destroys all the remaining larva.

Moths in sofas and other forms of furniture may be exterminated by injecting full-strength formaldehyde into the crevices. It is said the entire colony may be exterminated in a few weeks. The furniture may be used 24 hours after treatment. This should be done in the open air, owing to the highly irritant nature of the formaldehyde.

These moths, known also as the clothes moths, should not be confused with what are known as buffalo moths or carpet beetles, which are described under the heading Buffalo Moths.

Other preparations which are used as moth preventives and destroyers are the following:

Naphthalin Compounds.

Naphthalin is a favorite as a moth preventive but is objectionable on account of its odor. Various expedients have been resorted to as shown in these formulas to overcome the odor. Several other preparations containing naphthalin are mentioned under "moth powders," "moth species," etc.

I. Cedar-Naphthalin:

Oil of cedarwood.....	fl.oz. 2
Naphthalin, flakes	av.lb. 5

The oil destroys to a considerable extent the naphthalin odor and is itself a good moth preventive.

II. Compound Naphthalin Powder:

Naphthalin	av.oz. 8
Filler	av.oz. 4
Colocynth	av.oz. 2
Insect powder	av.oz. 1½
Borax	av.oz. 1

Snuffav.oz. $\frac{1}{2}$
 Oil of turpentine.....fl.dr. 4

Reduce the solids to powder, mix well, spread out on a sheet of paper and sprinkle the oil evenly over the whole. Then mix again and pass through a fine sieve. It should be put in a tight package, preferably the usual insect powder cans. The "filler" is usually bran, sawdust, corn meal, etc. If desired, perfume can be added to this powder, oil of cedarwood being very appropriate, and also adding materially to its efficacy.

III. Naphthalin-Camphor:

Camphor gumpart 1
 Naphthalinparts 3

Melt together carefully on a water-bath, then pour into molds, and form into cakes.—D.

IV. A variation of the preceding is this:

Camphorpart 1
 Paraffin waxparts 5
 Naphthalinparts 10

H.

V. Perfumed Naphthalin-Camphor:

Camphorav.oz. 3
 Naphthalinav.oz. 9
 Cumaringr. 3
 Oil of neroli.....drops 10
 Oil of mirbane.....drops 10
 Prepare like the preceding.

Moth Paper.

This is used for wrapping about the clothing or other articles to be protected, or sheets may be laid in the clothing:

Naphthalinav.oz. 4
 Paraffin waxav.oz. 8

Melt together, and while still warm paint with a rather broad brush upon unsized paper.—H.

Moth Powders.

These may be sprinkled among the clothes before the latter are packed away for the summer. Or they may be enclosed in little bags like sachet-powder bags and laid among the clothes. Or the powder may be laid between two sheets of paper and then laid in the clothing.

I.

Capsicum, powderav.oz. 1
 Naphthalin, powderav.oz. 4
 Insect powderav.oz. 5
 Mix well. Use as described above.—D.

II.

Naphthalinav.oz. 8
 Starchav.oz. 2
 Orris rootav.oz. 2
 Patchouly herbav.oz. 2
 Camphorav.oz. 2
 Reduce all to powder and mix well.

III.

Patchoulyav.oz. 5
 Valerianav.oz. $2\frac{1}{2}$
 Orris rootav.oz. $2\frac{1}{2}$
 Sumbul rootav.oz. $2\frac{1}{2}$
 Camphorav.oz. 2
 Naphthalinav.oz. 1
 Scotch snuffav.oz. 1
 Oil of cassia.....fl.oz. 1
 Oil of eucalyptus.....fl.oz. 1

Reduce the solids to fine powder and incorporate with the remaining ingredients.

Moth Species.

This is to be used like moth powder.

Patchouly, cutav.oz. 2
 Rosemary, cutav.oz. 4
 Thyme, cutav.oz. 4
 Sage, cutav.oz. 4
 Naphthalinav.oz. 4
 Oil of mirbane.....fl.dr. 4
 Oil of turpentine.....fl.oz. 1
 Alcoholfl.oz. 10

Dissolve the naphthalin and oils in the alcohol by the aid of heat, and sprinkle the solution while hot upon the mixed herbs or leaves. Introduce the mixture into bags or suitable size and lay them between the clothes to be preserved, which should be firmly wrapped, securely packed, and kept in a cool place.—D.

MOUNTING PASTE for Photographs.

See Paste for Mounting Photographs.

MUCILAGES AND PASTES.

See also under heading Pastes.

I. What is a satisfactory adhesive and was the first mucilage used is mucilage of acacia, which may be made satisfactorily according to the U. S. P. process. A preventive must be added such as oil of clove or wintergreen or other suitable antiseptic.

On account of the expensiveness of gum arabic, mucilages are made with numberless other substances as may be observed in the succeeding formulas. Gum ghatti may also replace the gum arabic.

II. Dextrin, being cheap and possessing strongly adhesive properties, is largely employed for making a mucilage, yellow dextrin being the kind mostly used.

Dextrin, yellowav.oz. 4
Waterfl.oz. 8

Heat the water, add the dextrin gradually with constant stirring, and continue the heat until the dextrin is dissolved. One fluidounce of acetic acid may be added to the water before heating, and to the solution may be added the same amount of alcohol to insure preservation. However, neither one is necessary if carbolic acid or an essential oil, like oil of clove or wintergreen be added. This mucilage may be thinned when it becomes thickened by exposure, by dilution with water. A small amount of glycerin added to the mucilage will prevent curling of the paper.

See Nos. IV for paste made with white dextrin.

III.

Dextrin, yellowav.oz. 8
Waterfl.oz. 12
Syrupy glucosedr. 3
Aluminium sulfate (not
alum)dr. 1½

Mix the dextrin with the water, add the glucose and aluminium sulfate, and heat the mixture to about 90° C., when it will become transparent and thin.—D.

IV.

White dextrinav.oz. 7
Waterfl.oz. 17
Diluted acetic acid.....fl.dr. 10
Glycerinfl.dr. 10
Oil of clove.....drops 16

Mix the dextrin with 7 fluidounces of warm water, then add 10 fluidounces of boiling water, and boil the whole for 5 minutes. Allow to cool, and add the other ingredients.

V. J. K. Williams' formula for flour Paste:

Rye flourav.oz. 8
Alum, powderdr. 1
Borax, powderdr. 1
Boric acidgr. 30
Waterfl.oz. 24
Acetic acid, 36%.....fl.oz. 2
Oil of sassafras.....m. 30

Thoroughly mix the flour, alum, borax and boric acid, add 8 fluidounces of cold water and stir or beat until free from lumpiness. Then add the acetic acid and 16 fluidounces of boiling water, all at once, and stir the whole until smooth. Then heat over a hot fire to break up the starch globules which will be indicated by the bluish tint on top, stirring thoroughly meanwhile to prevent scorching. Be careful not to heat too long. Allow to cool and incorporate the oil. Transfer to a covered jar and when wanted for use reduce with boiling water, about 1 part of paste to 2 of water, adding the water slowly and in a boiling condition and beating the mixture till smooth.

VI. E. W. Runyon's label paste:

Flourav.oz. 4
Nitric acidm. 40
Oil of clove.....m. 5
Carbolic acidm. 5
Waterfl.oz. 16

Thoroughly mix the flour and water, strain through a sieve, add the nitric acid, apply heat until thoroughly cooked, and when nearly cold add the oil of clove and carbolic acid.

In dry climates the addition of 5% of glycerin prevents it from drying too soon in the mucilage pot.

VII. Bradford's formula:

Wheat flourav.oz. 8
Alumav.oz. ½
Salicylic aciddr. 1
Waterpints 2

Dissolve the alum and acid in the water and add the flour. Rub to a smooth mixture, strain through a cheese-cloth, and wash the residue left on the strainer with the strained liquid until the flour is all through. Now apply heat, stirring constantly meanwhile. The de-

gree to which it is to be cooked will depend on the purpose to which it is to be put. If intended for bottling, cook just enough to thicken but not so heavy that it cannot be poured. But if it is to be stored, the heat should be continued until the paste takes on a bluish tint and becomes stiff and almost dry. Great care must be taken to prevent scorching or burning. When cooked in this way, it may, when cold, be cut in chunks and carried about in paper. When required for use it is to be thinned with water. If the heat be still further continued cautiously until all the water is driven off, the paste can be reduced to powder, which will keep indefinitely and is ready for use at any time by adding water.

This paste may be used by paperhangers. If the salicylic acid be replaced by 2 drams of caustic soda, the product will serve for applying labels to tin.

MUCILAGE, Elastic or Flexible.

Gum arabic	av.oz. 8
Water	fl.oz. 16
Salicylic acid	gr. 40
Soft soap	dr. 2
Glycerin	dr. 2
Alcohol	fl.oz. 1½

Dissolve the gum in the water; also dissolve the acid in the alcohol, mix with the soap and glycerin, and shake the whole thoroughly with the gum solution.

This mucilage keeps well and when it dries remains elastic without any tendency to cracking.

MUCILAGE, Stick or Bar. (Mucilage Pencil.)

Mucilage, in the form of sticks, is much used in architectural and mechanical drawing for attaching the drawing paper to a board, and is generally spoken of as mouth or lip glue. In making such a glue, only a very pure form of gelatin or glue should be used, as the least taste would prove disgusting when the glue is moistened with the lips. Sugar is generally added, not for the purpose of sweetening the glue, but in order to render it more easily soluble when it is to be used. This probably

is brought about by the sugar preventing the glue from becoming too dry and hard. Some even use a good quality of glue without any admixture whatever, but this requires more rubbing when it is applied, although it holds better than that to which sugar has been added. The sugar may be replaced by glycerin.

I.

Glue, best	av.oz. 4
Isinglass	av.oz. 1
Brown sugar	av.oz. 1
Water	sufficient

Soak the glue and isinglass in water until soft. Pour off the superfluous water, and add the sugar. Melt the whole together with a gentle heat and allow to evaporate until quite thick. Pour into a flat-bottomed dish that is quite cold, preferably placed on ice, and when solid cut the glue into the desired shape.

II.

Isinglass	av.oz. 1
White glue	av.oz. 1
Sugar	dr. 2
Tragacanth	dr. 2
Water	fl.oz. 1

Boil the whole together until when cold the mixture has the appearance of glue. Then form into rolls for use.

If desired the glue, made according to either of the above formulas, may, while hot, be poured into suitable molds that have been previously well chilled.

III.

Glue, best	av.oz. 12
Sugar	av.oz. 5
Water	sufficient

Soak the glue in water over night, and dissolve it by heat in the smallest possible quantity of water. Add the sugar to the hot solution, and dry the composition, like jujube paste, in oiled molds.

MUELLER'S FLUID (for Preserving Anatomical Specimens).

Potassium bichromate,	gr. 160 to 190
Sodium sulfate	gr. 80
Water	fl.oz. 16
Mix and dissolve.	

NAPHTHALIN PAPER.

See under Moth Preventives and Destroyers.

NICKEL PLATING.

See Plating with Gold, Silver, etc.

NUTRIENT GELATIN.

Gelatin	av.oz.	1
Extract of beef.....	dr.	3
Distilled water	fl.oz.	29

Dissolve the gelatin and extract in the water, filter, heat to boiling, and divide among test tubes which have previously been treated with boiling water. Close the cylinders with plugs of cotton, which has previously been heated for some time to a temperature of 150° C., then set aside for 4 weeks.

Only the gelatin mixture which remains clear is to be used; if it becomes turbid, it is to be boiled again and again until it remains clear.

Another nutrient gelatin is produced by dissolving 1 part of gelatin in 20 parts of infusion of hay.—D.

These are used for bacteriological work.

OIL CLOTH, To Furbish.

Paraffin wax	av.oz.	5
Oil of turpentine.....	fl.oz.	16

Dissolve the paraffin in the oil by the aid of a gentle heat, and apply with a sponge or piece of flannel while warm. Let it remain on the oil cloth for 24 hours, then polish with flannel.

OILS, Bleaching of.

See Bleaching of Linseed and Poppy Seed Oils.

OILED PAPER.

See Paper, Oiled.

OILY BOTTLES, To Clean.

See Bottles, Cleaning of Greasy.

OLIVE OIL, Denatured.

See Denatured Olive Oil.

"OXIDIZING" SILVER.

See Silver, Oxidizing of.

OZONIN.

Resin	av.oz.	5
Oil of turpentine.....	fl.oz.	8
Potassium hydrate	av.oz.	1
Water	fl.dr.	13

Hydrogen peroxidfl.oz. 3¾

Dissolve the resin in the oil, add the potassium hydrate first dissolved in the water, and then mix with the hydrogen peroxid. The resulting jelly when exposed to light for 2 or 3 days changes into a thin liquid known as ozonin, which in the proportion of 1 part in 1000 of water acts as a bleaching agent on fibres, wood, straw, paper, cork, etc., acting well in both acid and alkaline solution.

PAINT, BLACK, Glossy.

See Bicycle Paint.

PAINT, BRONZE.

See Bronze Paint.

PAINT, Glossy or Enamel, White.

Orange shellac	av.oz.	15
Copal resin	av.oz.	5
Venice turpentine	av.oz.	1
Linseed oil, raw.....	fl.oz.	4
Alcohol	pints	10

Mix, and add 4 or 5 pounds of zinc white or other white pigment.

Another enamel paint may be made by mixing the pigment with a good varnish.

PAINTS, How to Mix for Colors.

White and black makes gray.

Red and black makes brown.

Lake and white makes rose.

White and brown makes chestnut.

White, blue and lake makes purple.

Blue and lead color makes pearl.

White and carmine makes pink.

Indigo and lampblack makes silver gray.

White and lampblack makes lead color.

Black and Venetian red makes chocolate.

White and green makes bright green.

Purple and white makes French white.

Light green and black makes dark green.

White and Green makes pea green.

White and emerald green makes brilliant green.

Red and yellow makes orange.

White and yellow makes straw color.

White, blue and black makes pearl gray.

White, lake and vermillion makes flesh color.

Umber, white and Venetian red makes drab.

White, yellow and Venetian red makes cream.

Red, blue, black and red makes olive.

Yellow, white and a little Venetian red makes buff.

PAINT, LUMINOUS.

The process of making luminous paint depends on the property, possessed by certain substances, of absorbing light during exposure to sunshine or other very powerful sources of light, and giving it off again in the darkness, a property which is sometimes, though incorrectly, called "phosphorescence." The list of substances possessing this property in a greater or less degree is a long one, and among them the earthy sulfates and sulfids stand preeminent. Numerous processes have been devised for the utilization of this property, many of them covered by patents. One of the first of these was Balmain's process, which consists of a luminiferous substance introduced into ordinary paints. This substance is prepared by heating together certain mixtures of lime and sulfur, and the production of calcium monosulfid. Another French patent rests on the calcination of sea-shells (such as those of the oyster, clam, and other bivalves, cuttlefish bone, etc.) in the presence of sulfur, and the addition to the product of various monosulfids (*i. e.*, calcium, barium, strontium, uranium, magnesium, aluminum, etc.).

The following is a practical method of procedure: Clean a quantity of oyster or mussel shells by washing them in warm suds, rinse in running water, then put them in an open fire and beat them for 30 to 35 minutes, then remove and let cool. When cold, pound them up and remove carefully all grey portions, as they are of no use. Put the remaining portion in a crucible, making a thin

layer of the burnt shell, and putting on top of it a layer of sulfur, and thus alternating until the crucible is nearly full. Screw on the lid and lute to place tightly with a paste of sand mixed with beer. When this is thoroughly dry put the crucible in a hot fire and heat for an hour. Withdraw the heat, let the crucible cool down spontaneously and when quite cold, remove the top. If the operation has been properly conducted the contents will be a white powder. All grey bits that are still found should be removed, as they only serve to weaken the luminosity of the product. Now, sift the powder through a muslin sieve, raking it until only a few coarse bits remain. The sifted powder is mixed with gum water and applied in a thin layer to a cardboard, or other surface. When dry another thin layer, let dry and expose to strong sunlight for several hours. The surface will acquire a strong luminosity which, when fresh, will last all night.

Another process is the following:

Calcined oyster shells or cuttlefish bone	parts 4
Caustic lime	parts 4
Calcined sodium chlorid....	part 1.

Mix and thoroughly incorporate from 20 to 25% of sulfur and from 3 to 7% of calcium, barium, strontium or magnesium sulfid. The luminosity may be increased by adding incinerated marine algae. The powder is rendered adhesive by means of varnish (alcoholic copal, etc.), collodion, mucilage, etc.

Still another process for luminous calcium sulfid is this:

Boil for 1 hour $2\frac{1}{4}$ ounces caustic lime, recently prepared by calcining clean white shells at a strong red heat, with 1 ounce sulfur and 1 quart soft water. Set aside in a covered vessel for a few days; then pour off the liquid, collect the clear, orange-colored crystals which have deposited, and let them drain and dry on bibulous paper. Place the dried sulfid in a clean graphite crucible provided with a cover.

Heat for $\frac{1}{2}$ hour at a temperature just short of redness, then quickly for about fifteen minutes at a white heat. Remove cover, and pack in clay until perfectly cold. A small quantity of pure calcium fluorid is added to the sulfid before heating it.

PAINT REMOVERS (from Fabrics).

See under the headings Ammonia, Household; Benzin Jelly; Cleansing Preparations; Glove Cleaners; Soap, OxGall; and Stains from Fabrics, Removal of.

PAINT AND VARNISH Removers.

Numerous formulas have been devised for mixtures for removing old paint and varnish from woodwork. A mixture of equal parts of benzol, acetone and amylacetate has been recommended. The following has been patented in the U. S. Patent Office:

Paraffin	parts 4
Hard grease	parts 4
Benzole	parts 8
Methyl alcohol	parts 7

Another mixture for this purpose is this:

Acetone	parts 16
Wood alcohol	parts 16
Benzol	parts 5
Benzine	parts 3

PANAMA HATS, To Clean.

The following method has been recommended:

A.

Sodium sulfite	av.oz. 1
Glycerin	fl.dr. 4
Alcohol	fl.dr. 1
Water	fl.oz. $7\frac{1}{2}$
Mix and dissolve.	

B.

Citric acid	dr. $1\frac{1}{2}$
Alcohol	fl.oz. 1
Water	fl.oz. 9
Mix and dissolve.	

First sponge the hat with A, then lay it aside in a moist place, preferably a cellar, then apply B, and put away again for 24 hours. Finally iron with a flat-iron, which should not be too hot.

Sodium hyposulfite may be used in place of the sulfite.

See also Straw Hat Cleaners for other preparations to clean Panama hats.

Sodium perborate has been recommended lately for cleaning Panama hats. The steps in the process are: (1) Brush the hat in a solution of Castile soap in warm water to remove any superficial dirt, rinse, and (2) dip for 5 minutes in a solution of hydrochloric acid in water containing $\frac{1}{2}$ ounce of acid to the gallon; (3) transfer to a bath of sodium perborate—2 ounces to the gallon of lukewarm water—and allow to remain over night; (4) rinse out in a solution of oxalic acid of the strength of $\frac{1}{2}$ ounce to a gallon of water; (5) dry in sunshine or expose to the fumes of burning sulfur in a dry room.

PAPER, Barometer or Hygrometer.

See Barometer or Hygrometer Paper.

PAPER FOR BLUE PRINTS.

See Blue Printing Paper.

PAPER, CARBOLIZED.

Carbolized paper, suitable for the preservation of furs, etc., from moths, can be readily prepared by applying a strong solution of carbolic acid, with a brush or sponge to any unsized paper. A heavy paper will absorb more, and consequently last longer. The paper should be kept in close boxes until wanted, and the consumer directed to place the sheets freely among the articles to be protected, and wrap them tightly in ordinary paper.

Carbolic paper may also be prepared as follows:

Petrolatum	av.oz. 4
Paraffin wax	av.oz. 4
Carbolic acid	av.oz. 2

Melt the paraffin and petrolatum, add the carbolic acid, allow to cool and solidify, and with this prepare carbolized paper, as directed for making waxed and ceresin paper.—D.

PAPER, CARBON OR MANIFOLD.

The simplest formula is the following:

Lardparts 6
 Yellow waxpart 1
 Lampblackpart 1

Melt the wax, add the lard and make a thoroughly smooth mixture with the lampblack by trituration.

Brush this mixture while warm over suitable paper, and remove the excess with a flannel cloth.

PAPER, CERESIN.

This may be prepared similarly to waxed paper.

PAPER, HYDROGRAPHIC.

See Hydrographic Paper.

PAPER, IMPERMEABLE.

According to a French patent, impermeable paper may be made by applying the following mixture on the surface: Olive oil, 7 parts; rapeseed oil, 7; linseed oil, 7. Mix and add white wax, 2, previously dissolved in oil of turpentine, 2 parts.

PAPER, OILED.

Brush sheets of paper over with boiled oil and suspend them on a line to dry.

PAPER, PARAFFINED.

This may be prepared like waxed paper, or the paper may be drawn through melted paraffin; or, a better way is to melt 8 av. ounces of paraffin, remove from the fire, add 16 fluidounces of benzine; draw the paper through this, and then dry.

PAPER, Parchment, for Bottles.

The transparent paper used by manufacturers for "finishing off" pharmaceutical preparations is the kind known as "parchment," though of course it is not the real parchment, which is very rare and expensive. In wrapping the bottle, use paper of the proper size, apply flour or other white paste to the edges, roll the paper neatly around the bottle, wet the top portion of the paper by dipping in water, allow the excess of water to drain off, then fold the paper over and press it upon the bottle. The paste applied to the edges secures the back seam.

PAPER, RAZOR.

See Razor Paper.

PAPER, RESIN.

Gum turpentineav.oz. 1
 Benzinefl.oz. 16

Dissolve the gum in the benzine by maceration, and spread the mixture on paper by means of a brush. It is then dried by hanging up; the benzine odor may be removed by subjecting to the heat of a drying oven.

PAPER, TRACING.

I.

Apply with a brush a varnish compound of equal parts of balsam of fir and oil of turpentine to smooth unsized white paper, and hang up the sheets to dry.

II.

Rub the paper with a mixture of equal parts of cottonseed oil and oil of turpentine; dry immediately, by rubbing it with wheat flour, and then hang up for 24 hours to dry. If washed over with ox-gall, and dried, it may be written upon with ink or water colors.

PAPER, WAXED.

Place strong white paper on a hot iron plate and rub it well with a lump of white wax, the excess to be removed by means of a cloth pad.

PASTE, LIBRARY. (Photo-Library Paste.)

See also the Mucilages.

I. Edel's process:

White dextrinlbs. 5 or 5½
 Watergal. 1
 Oil of wintergreen.....m. 30
 Oil of clove.....m. 30

Heat the water to 160° F., then turn off the heat, add the dextrin and stir until dissolved. When cool, add the oils and stir well. Then pour into bottles, cork and put away in a cool place. After 2 to 4 weeks the mixture will alter or "ripen" so that a creamy paste is obtained. If the bottles are put into a refrigerator at a temperature of about 40° F., the "ripening" will occur in a week or less.

A patent was also granted for a preparation like this in 1895.

II. Ebert's formula:

Corn starch	av.oz.	2
Gelatin	av.oz.	$\frac{3}{4}$
Water	fl.oz.	16
Oil of clove.....	drops	16

Incorporate the starch with the water, add the gelatin, and heat the whole on a water-bath until a uniform jelly-like compound results. When nearly cold, stir in the oil.

III.

White dextrin	av.oz.	12
White sugar	av.oz.	3
Alum	av.oz.	$\frac{1}{2}$
Water	fl.oz.	20
Formaldehyde	m.	10
Oil of wintergreen.....	m.	10

Rub the solids to powder, mix well, and add the water in a boiling condition. Then allow to cool, rub in a mortar to a smooth consistency, and finally incorporate the formaldehyde and oil.

PASTE for Mounting Photographs.

I.

Gelatin	av.oz.	1
Alcohol	fl.oz.	$1\frac{1}{2}$
Glycerin	fl.oz.	$\frac{1}{2}$ to 1
Water	fl.oz.	4

Soak the gelatin in cold water for an hour or more, then drain off as much water as possible, and add to the alcohol contained in a wide-mouthed bottle. Now add the glycerin, the quantity to vary as the gelatin is of the soft or hard kind. Put the bottle in hot water, agitating occasionally until the glycerin is dissolved.

II.

Arrowroot	av.oz.	1
Gelatin	gr.	50
Alcohol	fl.oz.	1
Water	fl.oz.	10

Soak the gelatin in the water, add the arrowroot which has previously been mixed with a small quantity of the water and boil for 4 or 5 minutes. After cooling, add the alcohol and a few drops of carbolic acid or oil of clove.

PASTE in Powder Form.

A patent was granted some years ago

for a paste consisting of flour, starch, or other farinaceous substance, with an alkali, preferably caustic soda or potash, or other strongly alkaline substance. If the flour be mixed with any of these substances in the form of powder in the proper proportions they form a compound which, when mixed with water, will soon assume the consistence of a paste, and will become soluble in water. The action of the alkali on the flour bursts the starch cells and digests or dissolves it, increasing its bulk and reducing it to a paste, which may be thinned by the addition of water or thickened by the addition of more of the alkali and flour. These compounds are sold^d as powders, to be mixed with water by the user.

The following formula has been given:

Flour	parts	21
Caustic soda in powder....	parts	2

In place of the caustic soda, pulverized caustic potash may be used. Other forms of alkali—such as strong soda ash—may also be used, but the quantity must be considerably increased until sufficient to digest the flour.

A formula said to answer better for all purposes is the following modification of the above:

Flour, starch or other farinaceous substance.....	parts	21
Caustic soda (or potash), in powder	parts	2
Ammonium sulfate	parts	2
When using this, add water.		

The ammonium sulfate is used as a neutralizing agent and counteracts the strong effects of caustic soda on colored or tinted papers.

PASTE to Stick Labels on Tin.

Many expedients have been offered to enable paper labels to adhere to tin containers. A simple plan is to roughen the surface of the tin by rubbing with a piece of sand or emery paper, then applying the label in the usual manner. Or apply to the surface of the tin a slight coating of a resinous tincture, such as tincture of benzoin or myrrh,

allowing the tin to dry and then applying the label as before. Or rub the tin with hydrochloric acid or with tincture of iron and then applying the label as before.

If solution of silicate of sodium be used instead of mucilage or paste, the label will adhere indefinitely, but this preparation has some disadvantages, such as its strong alkalinity and the difficulty of applying it satisfactorily.

It is also said that labels peel off from the tin surface because of the drying of the paste and that if some ingredient were present in the paste which would cause it to remain permanently moist, this peeling off would not occur. Such substances are glycerin and calcium chlorid. Another substance which has been suggested as a good addition to ordinary paste to make it adhere to tin is solution of antimony chlorid.

Preparation No. VII under the heading Mucilages and Pastes is excellent for applying labels to tin.

PENCILS, COLORED.

See Colored Pencils.

PENCILS FOR WRITING ON GLASS.

Spermaceti	parts 3
Talcum	parts 3
Yellow wax	parts 2
Red lead	parts 6
Caustic potash	part 1

PESTLE HANDLES, To Cement.

The handles of wedgewood pestles are usually inserted with glue, which soon comes loose. When the handle does come loose, it may be reinserted in various ways. One method is to melt some orange shellac at a gentle heat, pour the melted mass into the cavity, then push in the handle. In a moment or two, the excess of shellac which has exuded will harden and may be scraped off.

Equal parts of caoutchouc and shellac are used in the same manner.

Another plan is to make a thick paste of litharge and glycerin, using this in the same manner as the melted shellac.

Instead of litharge and glycerin, a mixture of calomel and mucilage of acacia may be used.

Before attempting to use any of these substances, the cavity of the pestle and the end of the pestle handle should be freed from glue as much as possible.

PETROLEUM SOAP.

See Soap, Petroleum.

PHARAOH'S SERPENTS.

This curious chemical toy, also known as "eggs of Pharaoh's serpents," is prepared as follows:

Dissolve mercury in diluted nitric acid, being careful that there shall be an excess of mercury present. When the action of the acid has ceased decant the solution, and pour it into a solution of ammonium or potassium sulphocyanid. A precipitate of mercury sulphocyanid is formed which should be washed, collected, and dried. Then for every pound of this substance, take one ounce of gum tragacanth, soak it in water to soften thoroughly, transfer it to a mortar, add the dried precipitate, and make the whole into a paste by the addition of sufficient water. The mass is then pressed into molds of conical shape and dried. When these are ignited by the application of a match at the conical end they form an enormous volume of ash which proceeds in great coils from the body of the mass, and which by its serpentine movements as it is formed, has suggested the name.

This substance is not altogether free from danger in its use because mercurial fumes are formed during combustion of the mass. On this account several substitutes have been suggested. One of these which is almost as good as the original and which is not poisonous is prepared as follows:

Potassium bichromate	av.oz. 2
Potassium nitrate	av.oz. 1
Sugar	av.oz. 3

Pulverize each of the ingredients separately, and then mix them thoroughly. Make small paper cones of the desired

size and press the mixture into them. When quite dry they are ready for use. They should be kept from moisture and light.

PHOSPHORUS PASTES.

These are used mainly for the extermination of rats and roaches, but are equally effective against mice, water bugs, and other vermin.

The phosphorus is either melted in warm water, liquefied with sulfur, or dissolved in carbon disulfid, then mixed with a fatty substance like lard, suet, or oil, and finally with a floury substance to give the requisite consistency. Owing to the ready combustibility of phosphorus, great care must be exercised in handling it, especially when it is melted in water by the aid of heat.

Sometimes these pastes decompose ("sour") easily, especially if they contain any saccharine substance like molasses.

In using these pastes, they are smeared into all crevices and corners to combat roaches; for rats they are spread on thin slices of bread and cheese which are then cut up into small pieces and strewed about in appropriate places.

I. Rother's formula:

Phosphorus	av.oz. 1
Starch	av.oz. 4
Flour	av.oz. 12
Glycerin	fl.oz. 12
Water	fl.oz. 24

Make a smooth mixture of the starch, flour, glycerin and 20 fluidounces of water, straining through a No. 60 sieve if necessary, transfer to an enameled-iron evaporating dish, and apply heat, best by means of a sand-bath, until a plasma begins to form, stirring or beating meanwhile with a pestle or paddle; then take the vessel from the fire and stir as before while the plasma forms, so as to evenly divide it. After a few minutes reapply heat, stirring briskly until the plasma has completely formed, then set aside to cool, stirring occasionally.

Now place 3 ounces of the plasma, thoroughly mixed with the remaining 4 fluidounces of water, into a porcelain measure of the capacity of one pint, set this into nearly boiling hot water, and when the mixture has become sufficiently hot, drop in about 1 dram of the phosphorus. When this has fused, agitate the whole thoroughly with a spatula or pestle, and incorporate the remainder of the phosphorus in the same manner. By this manipulation the phosphorus is effectively extinguished without the risk of coming in contact with the air in an inflammable condition. After this thicken the phosphoric mixture with more of the reserved plasma and finally incorporate it thoroughly with the remainder of the plasma.

II. Scoville's formula:

Phosphorus	av.oz. 1
Lard	av.oz. 6
Barium carbonate	av.oz. 6
Water	fl.oz. 6
Wheat flour	av.oz. 12
Molasses	av.oz. 12

Make a dough of the flour and water and incorporate the lard. Place the molasses in a wide-mouthed bottle, add the phosphorus and heat upon a water-bath until the latter is melted, stir well to suspend the phosphorus, then add to the dough, and incorporate quickly. Finally stir in the barium carbonate and transfer to suitable bottles. The mass is liable to take fire while incorporating the phosphorus, which should be done in an open space, the hands being protected meanwhile by wrapping in wet cloths.

III. Patton's formula:

Phosphorus	av.oz. 1
Corrosive sublimate	dr. 1
Table salt	av.oz. 1
Glycerin	fl.oz. 1½
Wheat flour	av.oz. 8½
Water	fl.oz. 24

Beat the flour with the water to a smooth mixture, add the other ingredients and heat the mixture very cautiously. Stir meanwhile constantly with a

wooden paddle so as to obtain a uniform paste when all the starch cells are broken. When the paste is sufficiently solid, a small quantity of Venetian red may be added for coloring purposes. Finally put into suitable wide-mouthed bottles.

PIANO COVERS (Rubber), To Clean.

See Rubber Piano Covers, To Clean.

PIANO POLISH.

See Furniture Polish.

PICTURES, To Transfer.

A saponaceous liquid is generally used to transfer pictures from newspapers, magazines, etc., to glass, porcelain or similar articles, as in the following:

I.

Soft soapdr. 1
Potassium carbonategr. 30
Distilled waterfl.oz. 4
Mix and dissolve.

The print is laid on a flat surface, such as a drawing board, and moistened with the liquid. The paper on which the reproduction is required is laid over this, and then a sheet of thicker paper is placed on the top, and the whole rubbed evenly and hard with a blunt instrument, such as the bowl of a spoon, until the desired depth of color in the transferrer is obtained. Another and more artistic process is to cover the print with a transparent sheet of material coated with wax, to trace out the pictures with a point and to take rubbings of the same after powdering with plumbago.

II.

Hard soapdr. 2
Glycerinfl.dr. 1
Alcoholfl.oz. 1
Waterfl.oz. 2

For the soap use Castile or any other kind of hard soap. Dissolve it in the water by the aid of heat, then add the other ingredients.

Use this like the preceding.

III.

Common yellow soap.....dr. 2
Waterfl.oz. 4
Oil of turpentine.....fl.dr. 6

Dissolve the soap in the water by the aid of heat, and when the solution is nearly cold add the oil, and shake thoroughly together. This fluid is applied liberally to the surface of the printed matter with a soft brush or sponge (being careful not to smear the ink, which soon becomes softened) and allowed to soak for a few minutes; then dampen the plain paper on which the transfer is to be made, place it upon the engraving and subject the whole to moderate pressure for about one minute. On separating them a reversed transfer will be found on the paper.

PITCH FOR BOATS.

Pine or coal tar.....gall. 1
Rosinav.lb. 3

Melt the rosin and add the tar.

The product made with coal tar will chill the quickest.

PLANT FOOD.

See Fertilizers.

PLANT INSECT EXTERMINATORS.

See Insecticides for Plants.

PLASTER OF PARIS FORMULAS.

1. *To Make Plaster Set Hard.*—Mix best plaster of Paris with about 10% (more or less, according to effect ascertained by preliminary experiment) of very fine powdered marble (calcium carbonate). Or add to it about 6% of powdered alum, or about the same amount of ammonium chlorid, before mixing it with water.

2. *To Make Plaster Set Slower.*—Mix it with 2 to 4% of powdered althæa root before adding the water. This not only retards the hardening of the plaster, but also enables it to be cut, filed, sawed and turned.

An addition of 8% of althæa powder retards the complete setting of the plaster for about one hour, so that the mass can be used for any purpose where it is to remain plastic during at least a portion of that time. The addition of fine slacked lime will also retard the setting of plaster. The time of setting

may be regulated by changing the relative quantities of lime and plaster of Paris.

PLATING WITH GOLD, SILVER, TIN, ETC.

A number of processes and formulas are here given, all of which are highly recommended.

The deposition of one metal upon another may be made in several ways. What is now the most common and usually most satisfactory method of deposition, generally known as "plating," is by means of the electric current, this method being known as "electroplating." Another method of deposition, which is a very inferior process, is what is technically known as "washing." This consists in the application of a solution of a salt of a metal which is to be deposited by means of a cloth. The coating of metal deposited is so infinitely thin that it very quickly wears away, revealing the inferior material beneath.

I. Gold "washing":

A (liquid form).

Gold chloriddr. 1
Potassium cyaniddr. 3
Distilled wateroz. 1
Precipitated chalksufficient

Dissolve the gold chlorid in 1 fluidram of water, and the potassium cyanid in the remainder of the water; mix the two solutions and add enough precipitated chalk to make a thin paste.

After thoroughly cleaning the object to be gilded, and freeing it from grease, etc., apply this paste with a camel's-hair pencil evenly over the surface, keeping the liquid well stirred meanwhile. Let dry slowly at ordinary temperature. When dry, put in an oven and heat to 60 or 70° C. Wash off with clean water, dry and finish by going over the surface with a burnisher.

B (powder form).

Gold chloridgr. 90
Potassium cyanidgr. 280
Potassium bitartrategr. 24
Prepared chalkav.oz. 1
Mix the ingredients intimately; add

water to make a moderately thick paste; rub with a bit of flannel. The surface must, of course, be thoroughly cleaned.

II. Silver "washing" (for brass only):

A.

Silver nitrateav.oz. $\frac{1}{2}$
Potassium cyanidav.oz. 1
Precipitated chalkav.oz. 1
Distilled waterfl.oz. 6

Dissolve the silver nitrate and potassium cyanid each separately in a portion of the water, mix the two solutions, and add the chalk.

In using, clean the article to be coated so as to free it from grease and tar-nish, then rub with the liquid applied on a cloth.

B.

Silver nitrategr. 165
Ammonia waterfl.dr. 3
Sodium hyposulfitedr. 5
Precipitated chalkdr. 5
Distilled waterfl.oz. $6\frac{1}{2}$

Dissolve the silver salt in a portion of the water, the hyposulfite in the remainder, mix the two solutions, and add the ammonia and chalk.

This is to be used like the preceding.

C.

Silver chloriddr. 1
Cream of tartardr. $6\frac{1}{2}$
Sodium chloriddr. 3

The powder is made into a cream with water, and the article to be plated is either covered with the paint by means of a brush or immersed in the mixture for a short time; then, after being dried, it is rubbed off and the article polished with prepared chalk.—H.

The silver chlorid may be made by precipitating a solution of silver nitrate, about 1 in 20, with hydrochloric acid, previously acidulating the solution with nitric acid. Collect the precipitate on a filter, wash it with water, and dry it.

D.

Silver chloriddr. 3
Sodium chloriddr. 3

Prepared chalkdr. 2
 Potassium carbonate.....dr. 6
 Powder thoroughly and mix well.

To use the preparation dip a moistened rag in it and apply it to the article to be silvered, which latter should be thoroughly freed from grease, etc., before applying the powder.

This powder should be put up in paraffin paper as otherwise it will attract moisture from the air and become liquid.

III. Silvering objects by dipping:

This is a purely chemical method, the galvanic current not being used for depositing the silver on the objects. It is especially adapted for small objects made of brass and copper, such as buttons, nails, wire, screws, pins and needles, etc. The bath is made as follows:

Silver nitrate.....gr. 100
 Potassium cyanid.....dr. 6
 Water, distilled.....fl.oz. 18½

Dissolve the salts separately in the distilled water, then mix the solutions and warm on a water bath to about 50° to 60° C. The objects to be silvered are placed in a basket, or hung from a wire frame, and dipped in the warm bath. If the objects are perfectly clean, presenting a metallic surface, the silver will be deposited immediately. If the metallic surface of the objects presents a mat surface, a mat silvering results. When the surface to be silvered shows a bright metallic surface of high luster, the silvered articles come out with a polish and bright surface. If the operator finds the bath gives poor results, it is useless to add fresh salts; the liquid must be thrown away and a fresh solution has to be made. This method of silvering depends on the greater solubility of the copper and zinc over silver, and these metals must replace the silver in solution. Unfortunately, when an object is silvered by this method only a very thin film of metal is deposited. When a heavier plating is desired, the electro-plating

method must be resorted to, but, for small pins, trinkets and the like, where only a thin deposit is required, this method is advantageous, since so many objects can be treated at one time.

IV. Nickeling:

There is no reliable method of depositing nickel from its cold solution, as in the foregoing cases, but a thin and adhesive coating may be given articles of brass, iron, etc., by the following process: Boil in a copper vessel a saturated solution of zinc chlorid and an equal quantity of water. While boiling add hydrochloric acid, drop by drop, until the precipitate at first thrown down is again completely redissolved. Now add zinc in powder, until the bottom of the kettle is nearly covered with a precipitate of zinc. The bath is now ready for the addition of a salt of nickel, and either the sulfate or the nitrate may be used. Add it in sufficient quantity to give the bath a strong green color. The articles to be nickeled are now hung in the bath by means of a zinc wire, or a strip of sheet zinc, and a few pieces of the latter are thrown in along with them. Raise the heat to a strong boil and continue it for several minutes, or until the articles are covered with a bright coating of nickel. The articles should be thoroughly cleaned and freed from grease before being put in the bath. When finished, rinse and then rub well with precipitated chalk.

V. Platinizing:

Platinum chlorid, 1 part; sodium chlorid, 8 parts; distilled water, 100 parts. Bring to a boil, and put the articles to be platinized, first thoroughly cleaned, in the vessel. Keep at a moderate temperature, and in the course of 3 or 4 hours the platinizing will be completed. Polish with chamois.

There is as yet no known method of depositing aluminium by a process similar to any of the above.

VI. Brass scale pans, or any other metallic substance capable of taking a

deposit of silver may be plated in various ways. Here is a method recommended by Kayser:

It is absolutely necessary that the article to be plated shall present a perfect metallic surface, free from oxids, dirt, grease, etc.; it must be thoroughly scoured, if necessary, with the intervention of acids, and afterwards carefully washed. It is then to be dipped into a solution prepared by making a saturated aqueous solution of bisulfite of sodium, and adding to the latter so much of a solution of nitrate of silver (30 parts in 100) that there are 6 parts of the silver salt for every 100 of the bisulfite. The following would be a more simple way to state the proportions:

Sodium bisulfite.....	av.oz. 10
Distilled water.....	enough to dissolve
Silver nitrate.....	gr. 264
Distilled water.....	fl.oz. 2
Dissolve and mix the two solutions.	

Allow the article to remain in the mixture until it is properly coated, then take it out; wash it with water in which a little sodium carbonate had previously been dissolved; finally wash with pure water, and dry in sawdust.

POLISH FOR STOVES.

See Stove Polish or Blacking.

POLISHING CLOTHS.

The so-called polishing cloths are made in different ways. The simplest is to dissolve 1 ounce of oxalic acid in a gallon of water, and sift into the solution one pound of whiting. Saturate pieces of canton flannel, about 18 inches in this liquid, which is to be kept well stirred, wring out the cloth somewhat, and allow it to dry. Then smooth out the cloth, fold it, and insert in an envelope.

Another plan is to use a mixture of 2 parts of white castile soap, 1 part of jeweler's rouge, and 20 of water. Dissolve the soap in the water by the aid of heat, adding water from time to time if necessary, and then incorporate the rouge. Impregnate pieces of woollen

cloth, which may be red, in the same manner as the preceding. Instead of the cloth, chamois leather may be used which will prove more durable for many purposes.

Sometimes two kinds of cloths are used in conjunction. The first is impregnated with a mixture of flour of emery, 1 part, soap, 2 parts, and water, 10 parts, the second with a mixture of tripoli or jeweler's rouge, 1 part, soap, 2 parts, and water 10 parts. The first cloth is used as a scourer to remove the oxidized surface while the second cloth is the polisher proper.

POLISHING LIQUIDS.

A patent has been taken out in France for a liquid polish, which, it is claimed, is of wide applicability and great excellence, giving a high polish to varnished or polished surfaces of almost every description from floors, oil cloths, linoleum furniture, etc., up to art marbles. The formula is as follows:

Yellow wax.....	parts 30
Oil of lavender.....	part 1
Ammonia water.....	part 1
Alcohol	parts 2
Benzin, deodorized.....	parts 200

If a darker color be desired, a very small quantity of aniline brown may be added, dissolve in the alcohol.

POLISHING PASTE.

See Putz Pomades.

POLISHING POWDERS.

Under this heading are mentioned powdery mixtures used in polishing different metals. These powders must always be impalpably fine, particularly such as are used to polish silver and gold ware.

I.

Chalk	av.oz. 10
White bole.....	av.oz. 4
Lead carbonate.....	av.oz. 5
Magnesium carbonate....	av.oz. 1
Iron oxid.....	av.oz. 1

This mixture is best adapted to brass and copper.

II.

Calcined magnesia.....	av.oz. 9
Jeweler's rouge (crocus martis)	av.oz. 1

This mixture is recommended for polishing silver; it should be used dry.
—D.

III.

Calcined magnesia.....av.oz. 8
Jeweler's rouge (crocus
martis)av.oz. 8

This mixture is recommended for polishing gold; it should be used dry.
—D.

IV.

Magnesium carbonate.....av.oz. 4
Chalkav.oz. 4
Jeweler's rougeav.oz. 7

V.

Tartaric acid.....av.oz. 3
Chalkav.oz. 3
Alumav.oz. 1

Reduce all to very fine powder and mix well.

This is recommended for silver. Apply with a moistened rag, then polish with a piece of chamois.

VI. A popular preparation made in Germany was found upon analysis to consist of 9 parts of tripoli and 1 part of tartaric acid.

POLISH FOR SHOES.

See Shoe Blacking, Liquid; Shoe Blacking, Paste Form; and Shoe Dressing, Tan or Russet.

PORCELAIN LETTERS, To Fasten to Windows.

See under Enameled Letters.

PUTTY, GLAZIER'S.

Mix whiting with boiled linseed oil to form a stiff paste.

PUTZ POMADES.

By this term are signified pasty or fatty mixtures intended especially for polishing copper and brass; these mixtures may be used on steel, but should never be used on silver or gold.

The fatty substance present consists of a fixed oil—oleic acid, lard, petrolatum, palm oil, lard oil, etc., mixed with tripoli, rotten stone, emery, jeweler's rouge (also called crocus martis), pumice stone, etc.; the whole being flavored, as a rule, with oil of mirbane (nitro-benzol or artificial oil of bitter

almond). The powders must be in a very finely divided condition; it is, in fact, advisable to pass the mixture of fat and powder through a paint mill to insure fineness and smoothness.

I.

Rotten stone.....av.oz. 16
Stearinav.oz. 8
Cottonseed oilfl.oz. 4
Oil of mirbane....enough to flavor
Melt the fats, incorporate the rotten stone with them, and add the oil of mirbane when cool.

II.

Oxalic aciddr. 2
Peroxid of iron (jeweler's
rouge)av.oz. 4
Rotten stoneav.oz. 5
Palm oilav.oz. 15
Petrolatumav.oz. 1

Pulverize the acid finely and add the rouge and rotten stone, mixing thoroughly. Sift to remove all grit; then gradually add the palm oil and petrolatum, and incorporate. Add oil of mirbane or oil of lavender to flavor.

III.

Crocus martispart 1
Oleic acidsufficient
Petrolatum, to make.....parts 4

Make a paste of the crocus martis with the acid, and then add enough petrolatum to make 4 parts.

IV.

Tripoliav.oz. 8
Mercurial ointmentdr. 2
Petrolatum, enough to form a paste

This is said to be especially good for white metal goods as well as for brass. The presence of the mercury makes it more than ordinarily efficient.

PUTZ TABLETS.

Soap, cut fine or powder..av.oz. 16
Precipitated chalk.....av.oz. 2
Jeweler's rougeav.oz. 1
Cream of tartar.....av.oz. 1½
Magnesium carbonate....av.oz. 1
Watersufficient

Make a paste of the mixture with water and make into tablets which may be dispensed loose or in flat tin boxes.

This, like putz pomade, is used for polishing purposes.

PYROTECHNIC PAPERS.

See Fireworks Papers.

RAT EXTERMINATORS.

Various substances are used for exterminating or destroying rats and other rodents. These include arsenic, strychnine, phosphorus, plaster of Paris, barium, squill, etc. The methods of preparation are described below:

Arsenical Preparations.

These may be in the form of a powder, paste or pellets. The arsenic need not be the chemically pure arsenous oxid but may be the common powdered arsenic of commerce which is usually known as "white arsenic." Plaster of Paris is added to increase the efficacy of the arsenic and to act as a diluent. Sugar is sometimes added for sweetening purposes; flavoring oils and coloring substances are also added.

I.

White arsenicav.oz. 8
Plaster of Paris.....av.oz. 6
Sugar, powderav.oz. 2
Mix thoroughly.

The directions for use may be as follows: Mix the powder with three times its bulk of grease (any kind), butter, cheese, cornmeal, or any food rats or mice will eat.

II.

White arsenicav.oz. 2
Plaster of Paris.....av.oz. 8
Flourav.oz. 8
Lampblackgr. 20
Oil of anisedrops 5

Mix well and use like the preceding. The lampblack is for coloring purposes only.

III.

White arsenicav.oz. 4
Sugar, powderav.oz. 2
Wheat flourav.oz. 10
Aniline bluegr. 20
Oil of anise.....drops 30
Mix thoroughly.

When this powder is used, it may be moistened with water and made into a dough which may be divided into pellets and scattered near the haunts of the rats and mice.

Barium Preparations.

These have had some recommendation because of their non-poisonous character (to human beings and domestic animals).

IV.

Barium carbonate.....av.oz. 4
Sugar, powderav.oz. 1
Breadav.oz. 16

Mix well, add water, and make into 200 pellets.

V.

Barium carbonate, precipitatedav.oz. 10
Ultramarine blue.....av.oz. 1
Wheat flourav.oz. 3
Star-anise, powder.....av.oz. 1
Sugar-house syrup and glycerin,
enough to make a mass or paste

Divide into balls the size of a hazel nut, dust these with flour, and place them in the rat holes and along the runways of the rats. These balls may be used with perfect safety in barns.—H.

RAT SCENTS. (Rat Catcher's Oil.)

These preparations are applied to bait and to traps and also used on the hands of professional rat-catchers.

I.

Oil of rose geranium.....fl.dr. 1
Oil of cubeb.....fl.dr. 1
Oil of copaiba.....fl.dr. 6

II.

Oil of anise.....fl.dr. 2
Nitric aciddrops 3
Muskgr. 1

The latter should first be triturated with a small amount of sugar.

RAZOR PASTES. (Razor-Strap Pastes.)**I.**

Razor paste can be easily made by taking emery flour and shaking up with water and allowing to stand a moment to allow the coarse particles to subside; then pour off the remainder into a paper filter and allow to drain and dry. When dry mix with enough petrolatum or simple ointment to make a paste.

II.

Emery flour.
Jeweler's rouge.
Simple ointment, each, equal parts.

III.

Emery flour	av.oz. 1
Wood charcoal	av.oz. 1
Tin oxid	av.oz. 1
Jeweler's rouge (croco-	
martis)	av.oz. 1
Oleic acid	fl.dr. 5
Lard	av.oz. 2

All the solids must be in the finest powder and the whole must be well mixed.—D.

RAZOR PAPER.

Slightly dampen, smooth, unsized paper and on one surface rub in a mixture of finely powdered oxid of iron and emery flour. Then cut into pieces about 3 by 5 inches and dry. These are used to wipe razors after which they do not require stropping.

RESINS, BLEACHING.

Resins intended for the production of lacquers and varnishes may be bleached as follows:

Resin, crude or ordinary ..	av.oz. 5
Water, hot	fl.oz. 20
Sodium carbonate, crystal ..	av.oz. 1
Solution of soda, U. S. P. ..	fl.oz. 20
Sulfurous acid, gaseous ..	sufficient

Add the water to the resin, bring the mixture to a boil, add the sodium carbonate and solution of soda and continue heating until the resin is dissolved. Now strain, and into the colature pass gaseous sulfurous acid until the resin is precipitated, collect the latter, wash it with water, and dry at a moderate heat.—H. modified.

REDUCING SOLUTION for Photography.

I. The best formula is said to be Biletzki's, made as follows:

Sodium hyposulfite	av.oz. 5
Potassium ferric oxalate ..	av.oz. 1
Sodium sulfite	av.oz. 1
Oxalic acid, crystal	gr. 140
Distilled water	fl.oz. 20

Dissolve the ferric salt and sodium sulfite in the water, add the crystal acid to the solution, and shake until the latter changes in color from blood-red to bright green. Decant from any undissolved acid, and in this liquid dissolve the sodium hyposulfite.

The negative does not require freeing from hypo before applying this solution. The liquid keeps well in the dark, does not stain, and may be used over and over again until quite yellow.

II. Lumiere's solution:

Cerium sulfate	av.oz. 1
Sulfuric acid	m. 20
Distilled water	fl.oz. 10
Mix and dissolve.	

This may be diluted with from 3 to 6 parts of water, according to the rapidity of reduction desired. The solution is said to keep well and may be used repeatedly.

RESIN PAPER

See Paper, Resin.

ROACH EXTERMINATORS.

Roaches, also known as cockroaches, are of different kinds or species but their habits are practically alike and the methods of destroying them are the same. They are not easily exterminated readily because they are a very wary insect and besides breed prodigiously.

The Department of Agriculture in the Division of Entomology in making its studies in the readiest means for the extermination of roaches observed that fumigation with hydrocyanic acid gas proved very destructive. However, this gas is so very poisonous that its use is not recommended. Burning of insect powder in the infested apartment is also very effective, often destroying the roaches when dusting about of the powder proved of no avail. For direct application, good insect powder is recommended; sulfur also proved useful.

Other roach exterminators are the following:

Liquids.

I.

Oil of eucalyptus	fl.dr. 4
Gasoline	fl.oz. 8
Oil of turpentine	fl.oz. 8
Kerosene, to make	fl.oz. 64

The author of this formula recommends taking small bits of banana or banana peeling, soaking them in this liquid, and laying them around at night

in places frequented by the roaches. Some are killed by eating the bananas and others are driven out.

Pastes.

Many of the roach pastes are "phosphorus pastes," or so-called "electric pastes." See formulas under Phosphorus Pastes. Others are made with red lead or other ingredients. These pastes may be distributed on papers in the haunting places of the roaches, or they may be fed into cracks or crevices in which the insects hide.

II.

Red leadav.oz. 4
Flourav.oz. 12
Molasses.....to make a soft paste

III.

Red leadav.oz. 4
Corn meal, powder.....av.oz. 8
Molasses.....to form a soft paste

IV.

Insect powderav.oz. 8
Borax, powderav.oz. 8
Quicklimeav.oz. 4
Oil of eucalyptusfl.dr. 4

Mix well. The lime may be replaced by sulfur.

V.

Insect powderav.oz. 3
Borax, powderav.oz. 16
Red precipitategr. 2
Cudbeargr. 2
Carminegr. 2

VI.

Borax, powder.
Insect powder.
Colocynth, powder, each, equal parts.

VII.

Insect powderav.oz. 24
Boric acidav.oz. 5
Sugarav.oz. 2
Oil of cedarfl.dr. 2

RUBBER GOODS, To Preserve.

As a result of extended investigations by the Russian Army Medical Committee in 1893 it was determined that the best medium for preserving caoutchouc articles, hard or soft, is a 3% carbolic acid solution, such articles keeping for as long a period as ten years without change. The next best was a 3% solution of aniline,

but this has certain manifest disadvantages. Lime water, which was strongly recommended, failed in many respects. The solution required frequent changing, a deposit of calcium carbonate formed on the immersed objects, mold often developed, and the elasticity of the rubber suffered. In a solution containing 8% of glycerin and the same proportion of alcohol new rubber may be kept fairly well, but deteriorated tubing recovered none of its original elasticity. A 1% pentasulfid of potassium solution has the special virtue of restoring to hardened rubber some of its former properties, but the offensive odor of the solution would prevent its general employment. The carbolic solution is the most convenient and effective; its antiseptic action, too, is a strong point in its favor for hospital use.

RUBBER PIANO COVERS, To Clean.

Spread the covers on any convenient object, and scoured with water, using a liquid soap made of spirit of soap, yolk of eggs and oil of turpentine, after the following formula:

Spirit of soapfl.oz. 5
Oil of turpentine.....fl.oz. 1
Yolk of eggs.....No. 5

This is rubbed on the cover with a sponge, warm water is then applied, and the surface scrubbed with a stiff brush. For badly spotted or stained covers, the following is recommended:

Ox-gallfl.oz. 8
Alum, powder.....fl.oz. 1
Table salt.....fl.oz. 1

Mix and boil together for a few minutes. After cooling, bottle for use. A little essential oil of lavender or lemon may be added to cover the nauseous odor of bile. This may be used in the same manner as the foregoing preparation.

RUBBER-STAMP INKS.

See Inks, Stamping.

RUST STAIN Removers.

The following are recommended:

I.

Tartaric acid.....av.oz. 1

Alumav.oz. 1
 Water, to make.....fl.oz. 16
 Mix, dissolve and filter.

II. A mixture of 2 parts of powdered cream of tartar with 1 part of powdered oxalic acid will remove stains from cotton and linen.

Dampen the goods, apply the powder, allow to remain for a short time, and rinse in clear water. This mixture is said to work better than oxalic acid alone.

III. Rust Stains on White Goods.—Soak the stains in a solution of tin chlorid, and rinse immediately with much water. The tin salt is much more reliable in removing iron rust, and quicker in its action than oxalic acid, unless the stains are soaked in a solution of the latter, contained in a tin spoon, when the stains disappear in a short time.

SAFETY PAINT.

See Fireproofing Fabrics, Wood, etc.

SCALE PANS, To Clean.

Nickel or silvered pans may be cleaned with whiting and ammonia.

To clean brass scale pans, pour sufficient ammonia in the pan to cover the bottom, and rub briskly till dry with a handful of dry pine sawdust. For very dirty pans, take about a dram of potassium bichromate, powder it in a mortar, mix it with two or three times its bulk of concentrated sulfuric acid, and add twice as much water. With this rub the pans (having a care for the fingers), rinse well, and polish with a cloth moistened with oil and precipitated chalk or rotten stone.

SALT OF LEMON, Artificial.

The following formulas have been given:

I.
 Oxalic acidav.oz. 4
 Potassium carbonate.....av.oz. 2
 Cream of tartarav.oz. 6

II.
 Oxalic acidav.oz. 6
 Cream of tartarav.oz. 8

SCENTS for Attracting Animals.

I. For catching destructive butterflies:

Fly limeav.oz. 4
 Honeyav.oz. $\frac{1}{4}$
 Apple etherdrops 40
 Cumaringr. 1
 Mix by the aid of a gentle heat.

Smear the above on sticks of wood and set these in the garden which is to be protected. The butterflies will be caught on the sticky wood and will die there.—D.

II. For catching butterflies for a cabinet:

Common honey.....av.oz. 10
 Cumarin sugargr. 45
 Apple etherfl.dr. $1\frac{1}{2}$
 Mix by the aid of a gentle heat.

Smear this mixture on thick woollen yarn, and, towards evening, wind the latter in and about the bush tops. Then upon going out after dark—at intervals of about one hour—with a bright lantern or other bright light, the butterflies will be blinded and may be captured easily with the hand.—D.

III. For catching crayfish:

Rancid tallowav.oz. 7
 Cod liver oilfl.oz. 2
 Oil of spikefl.oz. 1
 Mix by the aid of heat.

Anoint the dry net with this mixture which may also be applied to the bait.—D.

IV. A. For foxes:

Tincture of musk.....fl.oz. 1
 Olive oilfl.oz. 10
 —H.

B.

Civetgr. 15
 Camphorgr. 60
 Asafetidagr. 120
 Orris rootgr. 180
 Valeriangr. 180
 Fennelav.oz. $3\frac{1}{2}$
 Oil of anisedrops 15
 Mix and reduce to powder.—H.

V. For wild animals:

Muskgr. 5
 Civetgr. 3
 Castoreum, Canadian.....gr. 45
 Oil of cascarilla.....drops 5
 Oil of valerian.....drops 5
 Oil of angelica.....drops 5
 Oil of patchoulidrops 5
 Starchav.oz. $3\frac{1}{2}$

Mix well and preserve in a well-stoppered bottle.—D.

VI. For rabbits:

Use a mixture of oils of anise, caraway, and rhodium.

VII. See also Rat Scents.

SEA SALT, Artificial. (Sal Marinum.)

Various formulas are given:

I.

Sodium chlorid.....av.oz.	80
Magnesium chlorid.....av.oz.	11
Magnesium sulfate.....av.oz.	6½
Calcium chlorid.....av.oz.	2
Potassium bromid.....gr.	130
Potassium iodid.....gr.	90
	—D.

II.

Sodium chlorid.....av.oz.	80
Magnesium sulfate.....av.oz.	16
Calcium chlorid.....av.oz.	3½
Potassium iodid.....gr.	70
Potassium bromid.....gr.	35
	—H.

III.

Sodium chlorid.....av.oz.	78
Magnesium chlorid.....av.oz.	11
Potassium chlorid.....av.oz.	3
Calcium sulfate.....av.oz.	3

Of the dry mixture I av. pound is to be dissolved in 30 pints to make artificial sea water for aquaria.

SEA WATER, Artificial.

See under Sea Salt, Artificial.

SEALING WAXES.

These consist of resinous substances in combination with coloring agents, the mixture frequently being cheapened by the addition of mineral substances. In preparing these, the less fusible resins, such as rosin and shellac should be melted, then the turpentine, Venice turpentine or similar more fusible agent should be added, and with this mixture should be incorporated the remaining ingredients. The powdery substances should be added in the very finely divided form, and should be added last; if there are several powders, they should be well mixed before adding to the liquefied resins. When the ingredients have been mixed, the heating should be continued for a few moments to per-

mit the escape of air bubbles which have been introduced during mixing of the ingredients.

The mixture may be cast into sticks, if desired, by pouring into suitable molds which have previously been anointed with petrolatum.

To cool off to the consistency required for molding, pour off about one-sixth of the mixture on a piece of wetted parchment paper, and as soon as this mass has hardened it should be returned to the vessel and stirred until the cooled portion is dissolved; the mixture may be poured into the molds.

A good general formula for sealing wax is this:

I.

Rosin.....av.oz.	8
Shellac.....av.oz.	4
Venice turpentine.....av.oz.	3

Mix by melting; then add the coloring matter, lampblack, ultramarine blue, Paris green, umber, Armenian bole, red lead, Venetian red, bone black, etc.

II. A softer wax may be made according to this formula:

Rosin.....av.oz.	8
Yellow wax.....av.oz.	8
Olive oil.....av.oz.	5
Venice turpentine.....av.oz.	12
Color like the preceding.	

Black Sealing Wax.

Bone black may be used instead of lampblack for coloring the mixture.

III.

Shellac.....av.oz.	12
Venice turpentine.....av.oz.	8
Resin.....av.oz.	1½
Lampblack.....sufficient to color	

IV.

Resin.....av.oz.	10½
Gum turpentine.....av.oz.	2½
Stearin.....av.oz.	1
Lampblack.....gr.	40
Heavy spar (barium sulfate).....av.oz.	20
	—D.

V.

Resin.....av.oz.	10
Chalk.....av.oz.	2½
Lampblack.....av.oz.	1
Venice turpentine.....av.oz.	1½
Melt the resin, add the Venice tur-	

pentine and incorporate with the chalk and lampblack which have previously been well mixed.

Blue Sealing Wax.

VI.

White shellac	av.oz. 7
Venice turpentine	av.oz. 3
Resin	av.oz. 1
Prussian blue	av.oz. 1
Calcined magnesia	gr. 90

VII.

Resin, white	av.oz. 15
Gum turpentine	av.oz. 4
Ultramarine blue	av.oz. 2
Heavy spar (barium sulfate)	av.oz. 2½

VIII.

Resin, white	av.oz. 15
Gum turpentine	av.oz. 4
Ultramarine blue	av.oz. 2
Zinc oxid	av.oz. 2
Heavy spar (barium sulfate)	av.oz. 2½

—D.

Green Sealing Wax.

IX.

Resin	av.oz. 10
Venice turpentine	av.oz. 1½
Chalk	av.oz. 2½
Chrome green	av.oz. 1

Melt the resin, add the turpentine, and then incorporate the chalk and chrome green which have previously been well mixed.

X.

Shellac	av.oz. 8
Mastic	av.oz. 4
Gum turpentine	av.oz. 1½
Verdigris	av.oz. 2

XI. Paris green may also be employed as the coloring agent.

Red Sealing Wax.

The coloring agents used may be vermilion or red lead, or even Venetian red.

XII.

Shellac, bleached	av.oz. 8
Venice turpentine	av.oz. 5
Chinese vermilion	two papers

XIII.

Shellac	av.oz. 10
Venice turpentine	av.oz. 2
Vermilion	av.oz. 4

Bleached shellac should be used in making this wax.

Violet Sealing Wax.

XIV.

Resin, white	av.oz. 7½
Gum turpentine	av.oz. 2
Carmine	av.oz. ½
Zinc oxid	av.oz. 2
Ultramarine blue	dr. 2
Heavy spar (barium sulfate)	av.oz. 10

—D.

White Sealing Wax.

XV.

Bleached shellac	av.oz. 7
Venice turpentine	av.oz. 3¼
Plaster of Paris	av.oz. 2
Bismuth subnitrate	av.oz. 3
Lead carbonate	av.oz. 4½
Magnesia	dr. 2

XVI.

Resin, white	av.oz. 7½
Gum turpentine	av.oz. 2
Zinc white	av.oz. 2
Heavy spar (barium sulfate)	av.oz. 8½

—D.

Yellow Sealing Wax.

XVII.

Shellac, bleached	av.oz. 8
Resin	av.oz. 2½
Venice turpentine	av.oz. 4
King's yellow (sulfid of arsenic)	av.oz. 1½

SEWING MACHINE OIL.

Sperm oil has been used as a sewing machine oil but it is considered too heavy for this purpose and should be thinned with some kerosene. Most sewing machine oils of the present time are the lighter paraffin oils. A patented preparation (1872) was directed to be made from a mixture of 3 gallons of sperm oil, 2 quarts of crude petroleum oil, 1 quart "spirit" of turpentine, and ½ pound of oil of wintergreen, this to be drained through woolen cloths spread over with powdered charcoal.

SHELLAC SOLUTION, To Make Clear Alcoholic.

The milky appearance of alcoholic solution of shellac is due to the presence of a waxy matter in the shellac which is insoluble in alcohol, and may be separated by shaking the alcoholic solution with benzine, which dissolves the wax, and after the liquids separate

pouring off the upper layer. An alcohol of about 85% should be used. Another method is to triturate with magnesia, precipitated chalk or some other finely divided insoluble substance and filtering. This effects the separation mechanically, but is objectionable on account of the loss of liquid absorbed by the powder.

SHELLAC, Bleaching of.

See Bleached Shellac.

SHOE BLACKING, LIQUID. (Ladies' Shoe Dressing.)

These preparations are usually resinous solutions colored black, and intended for application to shoes by means of sponge. They dry quickly, and give a polish without friction with a brush.

Whenever bone or ivory black is directed in a formula, the purified article should be preferred, as it gives a dead-black color; whereas the unpurified may give but a brownish or grayish black.

All the formulas mentioned herein come well recommended.

I.

Borax	av.oz. 2
Shellac, powder	av.oz. 6
Water	fl.oz. 40

Dissolve the shellac in the borax and water by heating on a water bath, stirring frequently. This will require several hours. Then add nigrosine sufficient to color. Water must be added from time to time to make up for that lost by evaporation.

Other colored dressings may be obtained by adding other dyes; for red, use eosin or fuchsin; for blue, methyl blue; green, malachite or methyl green; violet, methyl violet; etc.

II.

Bleached shellac	av.oz. 4
Borax	av.oz. 2
Sugar	av.oz. 4
Glycerin	av.oz. 2
Nigrosin	av.oz. 1
Water	sufficient
Mix the shellac, borax, and 14 fluid-	

ounces of water, and heat with constant stirring until the shellac is dissolved; then add the sugar, glycerin and nigrosin; stir until the latter is dissolved, and add enough water to make 36 fluidounces. —D.

SHOE BLACKING, Paste Form.

There are a variety of formulas here given and as may be observed they are mostly of a crude and unscientific aspect. They are however, the best that are available and most of them are well vouched for. There are two kinds of blacking, the older kind, made with sulfuric acid, and the more modern, acid-free kind which is suitable for patent leather and the finer grades of shoes.

The gist of the former kinds is that the calcium phosphate is decomposed by the strong sulfuric acid, calcium sulfate and acid phosphate being formed, a uniform mixture being thus obtained. Oil and saccharine substances, if present, are at the same time partially carbonized by the acid, thereby assisting to make an intimate combination.

Acid Blackings.

I. Brunner's Shoe Blacking:

Bone black	av.oz. 10
Syrupy glucose	av.oz. 10
Train oil	av.oz. 20
Sulfuric acid	av.oz. 5
Water	fl.oz. 4
Sodium carbonate	av.oz. 2

In a porcelain vessel mix the bone black and glucose, then rapidly and evenly stir in the acid. This is the most important part of the proceedings, for, if improperly done, the mass will be granular. When the mixture has acquired a shining black surface, when at rest, set aside. Dissolve the soda in the water, add to the oil, and boil, under constant stirring, until a thick mass is formed. Then stir into this the first mixture. What are known as "French" polishes are based on this process, various degrees of hardness being obtained by altering the proportions, using stale beer for thinning.

II. Liebig's formula:

Ivory black	av.oz. 8
Molasses	av.oz. 4
Sweet oil	av.oz. 1
Hydrochloric acid, com- mercial	av.oz. 4
Sulfuric acid, commercial	av.oz. 4
Water	sufficient

Mix the ivory black with the molasses and oil, add the hydrochloric and sulfuric acids, first mixing the latter with 3 or 4 fluidounces of water, and adding while hot. Let stand until all effervescence ceases, stirring occasionally, and finally, thin to the desired consistence with stale beer.

III.

Ivory black	av.oz. 12
Molasses	av.oz. 6
Olive oil	fl.dr. 4
Balsam of copaiba	fl.dr. 2
Sulfuric acid	av.oz. 1

Vinegar, to make a paste of suitable consistence.

Mix the oil and balsam with the ivory black, add the acid to the molasses, and mix this with the preceding. Allow to stand for 2 or 3 days, then add enough vinegar.

IV. This is said to be Day & Martin's formula as given by Mr. Day himself:

Ivory black	av.oz. 16
Lampblack	av.oz. 16
Molasses	av.oz. 16
Sperm oil	fl.oz. 4
Vinegar	fl.oz. 5
Sulfuric acid	oz. 4
Iron sulfate	av.oz. $\frac{1}{2}$
Gum arabic	av.oz. $\frac{3}{4}$
Water, hot	fl.oz. 5

Mix the first five ingredients, then add gradually the sulfuric acid, stirring in well. When the reaction ceases, add the iron sulfate and gum dissolved in the water. Beat well in a mortar or pass through a mill until the paste is of good consistency.

Acid-Free Blackings.

V.

Yellow wax, or ceresin	av.oz. 3
Spermaceti	av.oz. 1
Oil of turpentine	fl.oz. 11
Asphalt varnish	av.oz. 1

Frankfort black	av.oz. 1
Borax, powder	gr. 80
Prussian blue	gr. 150
Oil of mirbane	fl.dr. $1\frac{1}{2}$

Melt the wax, add the borax, and stir until a kind of jelly has been formed. In another pan melt the spermaceti; add the varnish, previously mixed with the turpentine; stir well and add to the wax; lastly, add the colors, mix well, and incorporate the oil of mirbane.

VI.

Carnauba wax	av.oz. 8
Sperm oil	fl.oz. 4
Oil of turpentine	fl.oz. 12
Soap, powder	av.oz. 1
Oil of mirbane	fl.dr. 1

Melt the wax and sperm oil together in a water-bath, remove from the source of heat, and add the oil of turpentine. When mixed, add the soap and oil of mirbane, and make into a homogeneous paste by trituration in hot mortar.

SHOE DRESSING, Tan or Russett.

These consist of a cleaner and a polisher, the former being a liquid, the latter a paste.

The Cleaning Fluid.

I.

Tragacanth	dr. 2
Oxalic acid	dr. 3
Water	fl.oz. 32

Mix and dissolve. It should be colored yellowish with aniline yellow or saffron.

II.

Yellow wax	av.oz. 4
Linseed oil, raw	fl.oz. 6
Oil of turpentine	fl.oz. 20
Soap	av.oz. $2\frac{1}{2}$
Water, hot	fl.oz. 28

Melt the wax at a gentle heat, then cautiously incorporate the two oils. The soap, which may be the ordinary yellow bar, should be in shavings and should then be dissolved in the water. Now mix the two liquids.

The Polish.

III.

Petrolatum, yellow	av.oz. 24
Yellow wax	av.oz. 8

Mix by fusion.

IV.

Rosin	av.oz.	1
Yellow wax	av.oz.	8
Petrolatum	av.oz.	24
Mix by fusion.		

V.

Yellow wax	av.oz.	16
Palm oil	av.oz.	8
Oil of turpentine.....	fl.oz.	16
Prepare like the preceding.		

SHOE DRESSING, White.

These are intended as dressings for white canvass shoes. Some are made with a borax-shellac body, others are resinous in character, the resin being dissolved in alcohol.

I.

Shellac, white.....	av.oz.	2
Borax	av.oz.	6
Water	fl.oz.	32
Pipe clay or chalk.....	sufficient	

Dissolve the shellac in the borax water by the aid of heat, adding water from time to time to make up for that lost by evaporation, then add the pipe clay or chalk in sufficient quantity.

By using less water and adding a little soap, a paste preparation may be obtained.

II.

Shellac, bleached	av.oz.	2
Borax	av.oz.	6
Sugar	av.oz.	4
Glycerin	fl.oz.	2
Zinc oxid	av.oz.	4
Pipe clay	av.oz.	8
Water	fl.oz.	20
Prepare like No. I.		

III.

Pipe clay	av.oz.	16
Whiting	av.oz.	8
Flake white	av.oz.	6
Precipitated chalk.....	av.oz.	4
Tragacanth, powder	dr.	2
Carbolic acid	dr.	2

Water, enough to make a thick paste or cream.

This is a modification of a formula said to be used in India.

IV.

Sandarac	av.oz.	5
Rosin	av.oz.	4
Burgundy pitch	av.oz.	2
White shellac	av.oz.	1
Alcohol	fl.oz.	36
Pipe clay.....	sufficient	

Dissolve the first four ingredients in the alcohol, strain, then add a sufficient quantity of pipe clay.

SHOE-FINISHER'S INK. (Burnishing Ink.)

Shoe-finisher's ink or "burnishing" ink is the liquid applied to shoe leather to change it to a black tint. It is applied to the edges of new soles.

I. Standage's formula:

Logwood extract	av.oz.	3
Nitric acid	m.	45
Ferrous sulfate.....	crystals	
Water, each.....	sufficient	

Boil the extract in a porcelain vessel with 16 fluidounces of water until the extract is dissolved, cover with paper to exclude dust, and set aside for 2 weeks. Now into a glass-stoppered bottle, put 3 drams of iron sulfate, add just enough water to dissolve the latter, and then the acid, and close the bottle. Mix the ingredients well and then add iron sulfate little by little until no more can be dissolved. Allow this mixture to stand a few hours and decant the clear liquid. To the logwood extract solution add from 2½ to 5% of the iron solution. Stir for 5 or 10 minutes when the mixture becomes of a purple hue as will be seen by observing it at the edges. If too much iron is added, the ink assumes a reddish hue.

This formula is the result of chemical investigation and should be an excellent one.

SHOE GREASE.

See also under the similar heading Harness Dressing and Oil.

I.

Petrolatum	av.oz.	2
Olive oil, common.....	fl.oz.	2
Ceresin	av.oz.	5
Alkannin	gr.	10
Oil of mirbane.....	drops	6
Oil of citronella.....	drops	3

Melt the ceresin, add the petrolatum, oil and alkannin; allow to cool, and incorporate the oils of mirbane and citronella.

II.

Yellow wax	av.oz. 1
Gum turpentine	av.oz. 1
Castor oil	av.oz. 1
Linseed oil	fl.oz. 10
Pine tar	dr. 2

Clean the leather; let dry, and rub the grease well in before a fire.

III.

Resin	av.oz. 2
Yellow wax	av.oz. 3
Linseed oil	fl.oz. 12
Neatsfoot oil	fl.oz. 8
Oil of turpentine.....	fl.oz. 4

This has been known as Norfolk

fluid.

IV.

Paraffin oil, yellow.....	av.oz. 28
Olive oil, common.....	av.oz. 2
Ceresin, yellow	av.oz. 10
Alkannin	gr. 18
Oil of mirbane	drops 12
Oil of citronella.....	drops 6

Melt the ceresin and add the other ingredients, dissolving the alkannin by agitation in the warm fat.—D.

The alkannin may be omitted and other scents may be used.

V.

Beef tallow	av.oz. 16
Yellow wax	av.oz. 6
Burgundy pitch	av.oz. 4
Petrolatum	av.oz. 8
Castor oil	fl.oz. 48
Oil of citronella	fl.dr. 4

Melt the first three ingredients together, then incorporate the petrolatum and neatsfoot oil, and, when cooled, add the citronella oil.

SHOE AND HARNESS MAKERS' WAX.

I. Yellow:

Burgundy pitch, yellow wax, equal parts of each. Mix by fusion.—D

II. Black:

Burgundy pitch	av.oz. 5
Yellow wax	av.oz. 4½
Lampblack	gr. 45
Linseed oil, raw.....	fl.dr. 2½

Make a smooth mixture of the lampblack and oil, then incorporate with the wax and pitch which have previously been melted together.—D.

SHOE POLISHES, Patent Leather.

These are the acid-free blackings mentioned under Shoe Blackings, Paste Form.

SHOES, TAN, Blackening of.

Before using any of these stains, the shoes should be thoroughly cleansed with soap and water and then dried so as to remove all dirt as well as fatty matter remaining from polishes.

The preparations mentioned under Shoe-Finisher's Ink will also serve for this purpose.

I.

Extract of logwood.....	av.oz. 2
Tincture of ferric chlorid..	fl.oz. 4
Tannin	dr. 4
Alcohol, to make.....	fl.oz. 16

Shake all together till nearly dissolved.

In using apply with a sponge or camel-hair brush, let dry for 12 hours, then rub with a soft rag and apply the stain again. When dry polish with a soft shoe brush or woolen rag. Polish afterwards in the usual manner with shoe blacking.

II.

Extract of logwood.....	av.oz. 2
Ferrous sulfate	dr. 1
Potassium bichromate.....	gr. 30
Water	fl.oz. 16

Mix and dissolve by agitation or the application of heat.

SHOE VARNISH, Patent Leather.

I.

Shellac	av.oz. 3¼
Gum turpentine	av.oz. 1¼
Sandarac	dr. 4
Lampblack	dr. 2
Oil of turpentine.....	fl.dr. 10
Alcohol	fl.oz. 30

Dissolve the three gums in the alcohol, strain, and then add the oil and lampblack so as to make an intimate mixture.

SHOES, Waterproofing for.

The following is recommended:

Linseed oil, raw.....	fl.oz. 8
Mutton suet	av.oz. 4
Yellow wax	av.oz. 4
Rosin	av.oz. ½

Melt the rosin, wax and suet and incorporate the oil.

Apply the mixture at a temperature of about 140°F., preferably using a brush. On the first application give two coats, being careful to get the preparation well into the seams around the soles, etc. For subsequent applications one coat (applied quite hot) will be sufficient.

This is also recommended:

Make a 10 or 15% solution of glue or gelatin in water with about 1% of glycerin, and add also a 10% solution of potassium bichromate. The bichromate solution is to be added only when the liquid is needed. Apply this in the dark, with a brush, and then expose the shoes or boots to direct sunlight for an hour or two.

SHOW GLOBE COLORS.

Colored liquids for show globes, show globe colors as they are termed, are frequently made of coal tar dyes, and very handsome colors may be produced in this way, but these, as a rule, lack permanency. However, these colors are inexpensive; so very little of the dye being required that they may be "freshened" occasionally, or they may be entirely renewed. Those who do not care to use coal tar dyes may employ the formulas mentioned below. It should be understood, however, that no show bottle colors are absolutely permanent, because they are exposed to one of the most powerful of all chemical agents, viz., light. From time to time they should be filtered or else renewed, and the bottle should be thoroughly cleansed.

Show bottle colors are liable to be subjected to considerable cold in winter time and to be frozen. This may be prevented by replacing 20 or 25% of the water with alcohol or glycerin. Such replacement cannot always be made, owing to possible chemical change—for example, in purple made with potassium permanganate.

The colors most commonly employed are red, green, blue and yellow. The formulas given below will yield these colors in several different shades. These shades may in each instance be made lighter or darker by increasing or decreasing the proportion of water.

The usual fault in making show-globe colors is that they are too dark. They should always be quite light as then they are more brilliant and lights placed behind them will show to much greater advantage.

All the solutions must be filtered until they are absolutely clear and bright.

Amber Color.

I.

Dragon's bloodgr. 45
Sulfuric acidfl.dr. 3
Distilled watergall. 2

Powder the dragon's blood and macerate in the acid for 20 or 30 minutes, then add the distilled water and filter.

II.

Potassium bichromateav.oz. 8
Nitric acidfl.oz. 16
Water, to make.....gall. 2

Dissolve the bichromate in the water, add the acid, and filter. Alcohol or glycerin must not be added to this liquid.

Amethyst Color.

III.

Sodium salicylategr. 10
Tincture of ferric chlorid....m. 30
Watergall. 2

Dissolve the salicylate in the water, and add the tincture.

Blue Color.

Different shades of blue are produced by these formulas.

Copper nitrate may take the place of copper sulfate.

IV.

Copper sulfateav.oz. 16
Sulfuric acidfl.oz. 2
Watergall. 2

V.

Copper sulfategr. 240
Ammonia water sufficient,
orfl.oz. 1 to 2
Watergall. 2

Dissolve the copper salt in water, add

ammonia water until the precipitate first formed is redissolved, and add the remainder of the water.

VI. Dissolve Prussian blue in water by the aid of oxalic acid, or dissolve soluble blue or indigo sulfate in water.

VII.

Copper sulfateav.oz. 8
Alumav.oz. 8
Sulfuric acidfl.oz. 8
Distilled watergall. 2

Dissolve the alum and copper sulfate in the water, cautiously add the sulfuric acid, and filter.

Canary Color.

VIII.

This is a light shade of yellow, which see.

Crimson Color.

IX.

Solution of iron chlorid.....fl.oz. 1½
Ammonia waterfl.oz. 1
Acetic acidfl.oz. 2
Alcoholfl.oz. 6
Distilled watergall. 2

Add the solution of iron chlorid to the water; then add the alcohol, acetic acid and ammonia water, and filter.

X.

Iodinav.oz. ½
Potassium iodidfl.oz. ½
Hydrochloric acidfl.oz. 9
Distilled watergall. 2

Dissolve the iodine and potassium iodid in the water; add the hydrochloric acid, and filter.

XI.

Alkanet rootav.lb. 2
Oil of turpentine.....gall. 2
Percolate the drug, previously finely ground, with the oil.

This makes a bright, beautiful color. If the show jar should be broken, there would be considerable danger of fire if there were any lights or fire nearby.

Garnet Color.

XII.

Potassium bichromate.....av.oz. 16
Sulfuric acidfl.oz. 16
Watergall. 2

Dissolve the bichromate in the water and add the acid gradually with stir-

ring. Clarify by allowing to stand and decant the clear portion.

Green Colors

These formulas produce different shades of green, such as emerald green, grass green, sea green, olive green, etc. Some of the colors are made with copper salts as a basis, others with nickel salts. The latter furnish the lighter colors.

XIII.

Copper sulfateav.oz. 27
Hydrochloric acidfl.oz. 24
Distilled watergall. 2

Dissolve the copper sulfate in the distilled water, and the hydrochloric acid and filter.

XIV.

Verdigrisav.oz. 24
Sulfuric acidsufficient
Distilled watergall. 2

Mix the verdigris with enough acid to dissolve; let stand a few minutes, add to the distilled water and filter.

XV.

Copper sulfateav.oz. 9
Ammonium chloridav.oz. 9
Water, to makegall. 2

First dissolve the copper salt in the water, then add the ammonium chlorid; dissolve and filter.

XVI.

Copper acetateav.oz. 1¼
Acetic acidfl.oz. 11
Water, to makegall. 2

Add the acetic acid to the copper acetate, and triturate with the water till dissolved.

XVII. Add an aqueous solution of picric acid to an aqueous solution of copper sulfate until the desired shade is produced. A beautiful grass green liquid will be the result.

A variation of this may be obtained by dissolving copper sulfate in water, adding ammonia water till the precipitate first formed is redissolved, then adding the picric acid solution. Both solutions must be used very dilute.

XVIII.

Copper sulfateav.oz. 8

Nitric acid	f.oz. 12
Water	gall. 2

Dissolve the copper salt in the water, add the acid, and filter through glass wool.

This has a bluish-green color by reflected light or daylight and clear green by transmitted light.

Lemon or Straw Color.

XIX.

Potassium bichromate.....	av.oz. 2
Sodium bicarbonate.....	av.oz. 1½
Water, to make.....	gall. 2

Dissolve the bichromate in a small amount of water, then add the bicarbonate. When effervescence ceases, add the remainder of the water, and filter. 10% of alcohol may be added if desired.

Magenta Color.

XX.

Chromic acid	dr. 1
Muriatic acid	f.oz. 2
Nitric acid	f.oz. 2
Water	gall. 2

Mix, dissolve, and clarify either by filtration or by subsidence and decantation.

Orange Color.

XXI. Dissolve annatto in solution of potassa and dilute alcohol, and filter.

Pink Color.

XXII.

Sodium salicylate	gr. 16
Tincture of iron chlorid.	
Hydrochloric acid, each....	sufficient
Water	gall. 2

Dissolve the sodium salicylate in the water and add cautiously tincture of iron in single drops until the proper tint has been realized. Hydrochloric acid may be used carefully (in drops) to render the tint paler. Should too much acid have been added, restore the tint by the addition of ammonia water.

Purple Color.

XXIII.

Verdigris	av.oz. 3
Ammonia water	f.oz. 18
Distilled water	gall. 2

Mix the water and the ammonia, add the verdigris, and, when dissolved, filter.

Purple (Brilliant) Color.

XXIV.

Copper sulfate	dr. 2
French gelatin	dr. 1
Solution of potassa.....	f.oz. 32
Water	sufficient

Dissolve the copper salt in 2 fluid-ounces of water, and the gelatin in the same amount of boiling water; mix the two solutions, add the solution of potassa, shake the mixture, let stand 10 hours, decant the clear liquid, and dilute as desired with water.

Red Color.

A variety of tints will be obtained by means of these formulas:

XXV. Dissolve carmine in ammonia water or liquor potassa, and reduce with water to the desired tint.

XXVI. To water in which red cabbage has been boiled, add sulfuric acid to bring out the color, dilute with water to the desired tint, and filter.

XXVII.

Cochineal	av.oz. 1½
Potassium bitartrate.....	av.oz. 1
Sulfuric acid	f.oz. 5
Distilled water	gall. 2

Boil the cochineal and potassium bitartrate in water until exhausted; allow to cool, add the sulfuric acid, and filter.

Instead of this, the solution of cochineal (cochineal coloring) of the National Formulary may be used.

Violet Color.

XXVIII.

Cudbear	av.oz. 2
Ammonia water	f.oz. 8
Water	gall. 2

Macerate together for 24 hours, and filter.

Yellow Color.

XXIX.

Potassium bichromate.....	av.oz. 10
Nitric acid	f.oz. 20
Distilled water	gall. 2

Dissolve the potassium bichromate in the water, and add the nitric acid; filter.

A Fluorescent Color.

XXX.

Fluorescein (or uranine)....	gr. 10
Alcohol	f.oz. 1
Water	gall. 2

Dissolve the fluorescein in the alcohol and add to the water. The addition of a small amount of ammonia water or solution of soda increases the fluorescence.

As it is liable to become decomposed, it is advised to pour about 20 or 30 drops of formaldehyde on the surface of the liquid after it has been filtered into the show bottle.

SILVER NITRATE STAINS, To Remove.

The preparations mentioned for removing silver nitrate are equally efficacious against indelible (marking) ink stains, the latter usually having a silver salt as the basis.

The following may be tried: (1) First soak in a solution of common salt, and afterward wash with ammonia; (2) Treat with a solution of potassium cyanid, 10 grains; iodine, 5 grains, in one fluidounce of water; (3) Moisten with a solution of iodine in potassium iodid, and afterward wash with water; (4) Treat with a strong solution of zinc sulfate, and then touch with a piece of metallic zinc, afterward washing; (5) Treat with a solution of chlorinated lime (either Javelle water or Labarraque's solution); (6) alizarine ink stains may be removed by treating with a solution of tartaric acid, the older the stain the more concentrated the solution.

The following are recommended for removing silver stains from the skin: (1) Potassium cyanid in strong aqueous solution, but it is so very poisonous that it must be used with extreme caution; (2) A mixture of potassium ferricyanid and sodium hyposulfite. A few crystals of the former are dissolved in a solution of hyposulfite, or from 10 to 20% solution of the ferricyanid may be added to the hyposulfite solution and applied to the stains; (3) Dip the fingers into a strong solution of copper chlorid. In about a minute the silver will be converted into chlorid and may

then be washed off with a solution of sodium hypophosphite.

SILVER, To Remove Mercurial Stains from.

First apply tincture of iodine, then a concentrated solution of potassium iodid.

SILVER, "Oxidizing" of.

The so-called "oxidizing" of silver is really a sulfuration or the formation of a superficial layer of sulfid. One process is to immerse the silver in a solution of 40 grains of sulfured potassa and 80 grains of ammonium carbonate in 16 fluidounces of distilled water warmed to 80° C. Another process is this:

To a cup of hot water add about 10 grains of sulfured potassa, and dissolve. Into this dip the article to be "oxidized," after first making it as white as possible with the scratch brush, and allow it to remain for about 2 minutes. Then take it out, rinse off with clear water, polish again with a scratch brush, and again immerse in the solution. Repeat this rubbing with a scratch brush and dipping in the solution by which time the article will probably be sufficiently "oxidized."

SILVER PLATING.

See Plating with Gold, Silver, Tin, etc.

SILVER POLISH.

See under Polishing Powders, or use one of the following:

Powders.

Cream of tartarav.oz. 2
Prepared chalkav.oz. 2
Alum, fine powder.....av.oz. 1

When required for use wet sufficient of the powder and with soft linen rags rub the article, being careful not to use much pressure, as otherwise the thin layer of plating may be cut through. Rinse in hot suds, afterward in clear water, and dry in sawdust. When badly blackened with silver sulfid, if small, the article may be dipped for

an instant in hydrochloric acid and immediately rinsed in running water.

II.

Rouge (crocus martis).....dr. 2

Magnesium carbonate,

heavyav.oz. 4

Precipitated chalkav.oz. 8

Triturate the rouge thoroughly with the other ingredients, then pass the whole through a fine sieve.

III.

Jeweler's rouge (crocus

martis)av.oz. 1

Tripoliav.oz. 1

Sodium hyposulfite.....av.oz. 2

Prepared chalkav.oz. 8

Make into a very fine powder and pass through a fine sieve.

This is to be used like No. I.

IV. Infusorial earth, which may be bought quite cheaply, makes an excellent polish for jewelry and silverware.

V.

Liquids.

Prepared chalkav.oz. 3

Ammonia waterfl.oz. 3

Alcoholfl.oz. 5

Waterfl.oz. 20

VI.

Sodium hyposulfiteav.oz. 1

Prepared chalkav.oz. 1

Waterfl.oz. 8

Dissolve the hyposulfite in the water, and add the chalk.

VII. An excellent polish in liquid form may be obtained by mixing half an ounce of infusorial earth with 3 fluidounces of water.

Paste.

VIII.

Prepared chalkav.oz. 2

Oleic acidfl.oz. 2

Stearinav.oz. 6

Make a smooth mixture of the chalk and acid, then incorporate with the stearin which has previously been melted at a gentle heat.—H.

Soap.

IX.

Jeweler's rougepart 1

Magnesiaparts 9

Soapparts 40

Watersufficient

Dissolve the soap in the smallest possible amount of hot water by the aid of heat, and incorporate the other ingredients.

SILVER, To Prevent the Tarnishing of.

The blackening which silver and silver-plated articles speedily suffer is due principally to the formation of a superficial film of silver sulfid by the action of the hydrogen sulfid in the atmosphere, especially in cities, where the large consumption of coal and coal-gas charges the atmosphere with sulfur and sulfur compounds. Of all the suggestions that have been made, none appear to have given satisfactory results as a varnish of collodion—a solution of gun-cotton in a mixture of alcohol and ether. All other varnishes appear to impart a yellowish tinge to the silver or plated wares, but collodion varnish is quite colorless. The articles should be carefully brushed with the varnish with an elastic brush, making sure that the entire surface is covered. The film of collodion will protect the underlying metal surface for a long time.

SILVERING OF GLASS. (Making of Mirrors.)

The former process for making mirrors is by means of an amalgam of mercury. The following is the process said to be in use by mirror manufacturers some years ago:

A sheet of pure tin-foil, slightly larger than the glass plate to be silvered, is spread evenly on a perfectly plane stone table having a raised edge, and is well cleaned from all dust and impurity. This tin-foil must be free from the slightest flaw or crack. The tin is next covered uniformly to the depth of $\frac{1}{8}$ of an inch with clean mercury, preference being given by some to that containing a small proportion of tin from a previous operation. The glass plate, freed from all dust or grease, and repolished if necessary, is then carefully slid over the mercury. This part of the work requires skill and

experience to exclude all air bubbles, and even the best workmen are not every time successful. If there is a single bubble or scratch the operation has to be repeated and the tin-foil is lost. When this step has been satisfactorily accomplished the remainder is comparatively easy. The glass plate is loaded with heavy weights to press out the excess of mercury, which is collected and used again. After 24 hours the mirror is lifted from the table and placed on edge against a wall, where it is left to drain well for several weeks.

At the present time it is customary to make mirrors by causing a deposition of metallic silver on the glass. The latter is first made chemically clean by washing or scrubbing with an alkaline liquid, then rinsing with distilled water. Any spot or stain, even a momentary touch of a person's finger, is liable to interfere with the uniformity of the deposition of the silver and be the cause of an imperfect mirror. After the glass has been cleaned and drained it is to be laid down flat and over it floated a solution of the silver salt, usually the nitrate with some ammonia added. When the glass is completely wetted, a reducing substance in aqueous solution is added. Various reducing agents are used, such as Rochelle salt, glucose, formaldehyde, etc.

I. Edel's process:

Solution A.

Silver nitrateav.oz. 1

Distilled water.

Ammonia water, each.....sufficient

Dissolve the silver salt in 8 fluid-ounces of distilled water and add ammonia water gradually until the brown precipitate that is thrown down at first is just dissolved, being careful not to add too much ammonia. To make sure that too much ammonia has not been used, drop into the liquid a crystal of silver nitrate and shake; if the solution becomes turbid, no excess of ammonia has been used, and if it does not, more silver must be added till it does be-

come turbid. Then filter the liquid through a double paper filter, returning the first portion of the filtrate to the filter until the liquid runs through clear, and add enough distilled water through the filter to make the filtrate measure 16 fluidounces. Put this in a clean bottle, cork well, and keep in a cool, dark place over night.

Solution B.

Rochelle salt, chemically

puredr. 2

Silver nitrategr. 10

Distilled water, to make..fl.oz. 16

Dissolve the salt in 10 fluidounces of water, and heat the solution to boiling in a porcelain dish. Then add 10 grains of silver nitrate, stir with a glass rod, and boil the liquid gently for 10 or 15 minutes or until it becomes of a gray color. Filter this paper until clear and add enough distilled water through the filter to make 16 fluidounces of liquid. Put this into a clean bottle, cork well, and place away for 5 or 6 hours.

When the preparation is wanted for use, mix

Solution Afl.oz. 1

Solution Bfl.oz. 1

Distilled waterfl.oz. 4

Immediately pour this mixture over the glass, which has previously been cleaned as described above, and leveled on some firm support. Then allow to stand until the solution has deposited its silver, about one hour being required. Then decant the excess of liquid, rinse off with clear water, and stand the glass on edge to dry. Lastly apply a protective coating of asphaltum varnish, using a soft brush to avoid scratching the silver.

SILVERWARE, To Clean.

See under Polishing Powders and Silver Polish. The following useful points may also be noted here in regard to cleaning silverware:

Make a thin paste of prepared chalk and sodium hyposulfite, in equal parts. rubbed up in distilled water. Apply this paste to the surface rubbing well with

a soft brush. Rinse in clear water and dry in sawdust.

Ink Stains.

Silver articles in domestic use, and especially silver or plated inkstands, frequently become badly stained with ink. These stains cannot be removed by ordinary processes, but readily yield to a paste of chlorinted lime and water. Javelle water, when at hand, may be used instead.

Egg Stains.

These are easily and quickly removed from silver by rubbing with common salt. A pinch taken between the thumb and finger and rubbed on the spot with the end of the finger will usually remove the darkest egg stain.

To Clean Silver Ornaments.

Make a strong solution of soft soap and water, and in this boil the articles for a few minutes—5 will usually be enough. Take out, pour the soap solution into a basin, and as soon as the liquid has cooled down sufficiently to be borne by the hand, with a soft brush scrub the articles with it. Rinse in boiling water and place on a porous substance (a bit of tiling, a brick, or unglazed earthenware) to dry. Finally, give a light rubbing with a cham- ois. Articles thus treated look as bright as new.

To Frost Polished Silver.

Articles of polished silver may be frosted by putting them into a bath of nitric acid diluted with an equal volume of distilled water, and letting remain for few minutes. A better effect may be given by dipping the article frequently into the bath until the requisite degree of frosting has been attained. Then rinse and place for a few moments in a strong bath of potassium cyanid, remove and rinse. The fingers must not be allowed to touch the article during either process. It should be held with wooden forceps or clamps.

SLATING PAINT FOR BLACK-BOARDS.

See Blackboard Slating.

SNOW IMITATION for Christmas.

Ordinary cotton is too dangerous to use for Christmas decorations. The best substance for this purpose is pure white "mineral wool," *i. e.*, asbestos. If this is not available or if it be too expensive, ordinary cotton rendered incombustible by treatment with a fire-proofing solution may be used. See under Fireproofing Fabrics, etc.

A more highly decorative effect will be obtained if the cotton is strewn with what is known as "diamond dust." See under heading Diamond Dust.

SOAP BUBBLE LIQUID.

I.

Castile soap	av.oz.	½
Glycerin	fl.oz.	4
Water	fl.oz.	6½

Dissolve the soap in the water and add the glycerin. The latter makes the bubbles tenacious or more permanent. The same effect may be obtained by the use of gum arabic.

Bubbles blown with this solution, if cautiously deposited on a soft woolen cloth, will retain their shape for several hours, and if covered with a glass shade to prevent evaporation will sometimes keep for 3 or 4 days.

II. The following is also recommended:

Castile soap, powder.....	av.oz.	2
Mucilage of acacia.....	fl.dr.	2
Glycerin	fl.oz.	4
Water, to make.....	fl.oz.	16

Dissolve the soap in a portion of the water, add the other ingredients, and strain. Use about an ounce to a pint of water.

SOAP, ARSENICAL.

I.

Arsenous acid, fine powder.....	gr.	320
Potassium carbonate	gr.	120
Castile soap	gr.	320
Lime	gr.	40
Camphor	gr.	10
Water		sufficient

Heat the acid and potassium carbonate with one fluidounce of water in a porcelain capsule, until the acid is completely dissolved. Then add the soap, in thin shavings, and after this has been thoroughly incorporated, add the lime and camphor previously reduced to powder.

Keep the product in well-closed vessels.

This soap is primarily intended for use by taxidermists.

II. This is Toellner's formula:

Salicylic acid	av.oz.	1
Borax, fine powder.....	av.oz.	$\frac{1}{2}$
Naphthalin, fine powder...	av.oz.	$\frac{1}{2}$
Arsenous acid, fine powder.	av.oz.	5
Soap, fine powder.....	av.oz.	5
Water	fl.oz.	10

SOAP, BENZIN.

See Benzin Jelly.

SOAPS, CLEANING.

See under the headings Cleaning Soap; Benzin Jelly; Carpet Cleaners; and Soap, Ox-Gall.

SOAP, OX-GALL.

This has been highly recommended for its detergent properties. It is said to remove stains of all kinds from fabrics.

I.

Extract of quillaja.....	av.oz.	1
Borax, powder	av.oz.	1
Ox-gall, fresh	fl.oz.	4
Common or castile soap, powder	av.oz.	15

Triturate together the borax, extract and ox-gall, dissolving as much of the borax as possible. Then add the soap, beat the whole to a uniform consistence, and cut into cakes of the desired size.

If no extract of quillaja be at hand, soap bark in shreds may be exhausted by boiling with water, straining, and evaporating the liquid on a water-bath. One hundred parts of bark yield about 20 of extract.—D.

It has been suggested to add to this 1 ounce of glycerin and about 2 drams of oil of sassafras.

II.

Oleic acid	av.oz.	1
Borax	av.oz.	2
Ox-gall, fresh	av.oz.	5
Tallow or common soap...	av.oz.	20

Triturate the borax with the ox-gall; then thoroughly incorporate with it the soap, previously reduced to powder, and lastly incorporate the oleic acid.

SOAP, PETROLEUM.

I. Emery's formula:

Petroleum	av.oz.	5
White wax	av.oz.	4
Alcohol	fl.oz.	6
Marseilles soap	av.oz.	10

Mix the petroleum, wax and alcohol in a flask and heat until they are completely dissolved, then add the soap, and dissolve again. Remove the flask from the source of heat, shake until the contents assume a creamy appearance, and then pour into molds.

The alcohol is not absolutely necessary; it merely aids in dissolving the wax and soap. The product contains approximately 25% of petroleum.

II. Hager's formula:

Petroleum	av.oz.	6 $\frac{1}{2}$
Domestic soap, dried.....	av.oz.	4 $\frac{1}{2}$
Japan wax	av.oz.	2
Solution of caustic soda,	sp.gr.	1.33, av.oz. 2
Water	fl.oz.	4 $\frac{1}{2}$
Alcohol	fl.oz.	12
Oil of citronella.....	fl.dr.	3

Cut up the soap and wax to fine shavings, mix with the water, alcohol, and solution of soda, and heat together until the wax is saponified and a translucent mixture is obtained. With this incorporate the petroleum and oil of citronella.

The solution of caustic soda may be made from 1 part of dry sodium hydrate dissolved in 2 parts of water.

SOAP, POLISHING.

See "Soaps" under Silver Polish.

SOAP, SILVER.

See under Silver Polishes.

SOAP, STEARIN.

Stearic acid	av.oz.	2 $\frac{1}{4}$
Sodium carbonate, crystal...	gr.	560
Water	fl.oz.	8
Alcohol	fl.dr.	2
Sodium chlorid	fl.dr.	4

Dissolve 540 grains of the crystallized sodium carbonate in 6 fluidounces of water; transfer this solution to a water-bath and gradually add the stearic acid with constant agitation; then add the alcohol; cover the vessel, and allow it to remain upon the bath for 6 hours to separate the soap; add the sodium chlorid and the remainder of the sodium carbonate, dissolved in the remainder of the water; transfer the whole to a strainer, and when cold press out the remainder of the moisture.—D.

SOAP, Whale Oil.

This may be prepared like the soft soap of the U. S. P., substituting crude fish oil for linseed oil.

SOLUTION, Non-Freezing.

This is said to make a preparation of this kind:

Pearlash	av.lb. 5
Glycerin	pints 3
Water, to make.....	gal. 1
Mix and dissolve.	

SOOT FROM STOVEPIPES, To Remove.

See under headings Chimney Cleaners and Stovepipes, To free from Soot.

SPONGES, Bleaching of.

See Bleached Sponges.

SPONGES, USED, To Clean.

Different methods have been recommended for cleaning mushy, sticky or slimy sponges, such as have been in use around a soda fountain and which are not made clean by a simple washing with soap and water.

I.

Table salt	av.oz. 8
Ammonium carbonate	av.oz. 4
Water, hot	gal. 1

Dissolve the salts in the water and soak the sponges in this solution for an hour or two, then rinse them in clean water, squeeze them out, and let them dry.

II. Wash the sponges in warm water, each gallon of which contains half an ounce of solution of soda, then rinse them in clear water, and transfer to bromin water, allowing them to remain

until they become white. Again wash in clear water, transfer to the water containing the solution of soda, and wash once more in clear water to remove all traces of bromin. Then squeeze as dry as possible and dry by exposure to the sun if possible.

STAINS FROM FABRICS, Removal of.

Various cleansing preparations are mentioned under the headings Ammonia, Household; Benzin Jelly; Cleansing Preparations, Carpet Cleansers; Glove Cleaners; Mildew Spots, To Remove; and Soap, Ox-Gall.

Before applying any of the cleansers mentioned in this work to colored goods an experiment should be made, either with a sample of the goods or on some portion which will not be seen, to determine whether directions given for treating the spot will not affect the color.

The tables given herein will be useful to determine in just about what manner fabrics must be cleaned.

Whenever a cleansing liquid is mentioned, it may be any of the preparations mentioned under Cleansing Liquids, Cleansing Creams, Benzin Jelly, or similar article.

The Spot is of Unknown Origin.

White Goods.—Dissolve some soap in lukewarm water and add 2 dessert-spoonfuls of "cleansing liquid" and dampen the spot with a sponge soaked in this solution; finally wash out in clear water.

Colored Woolens.—Dissolve a "cleansing pencil" in a bottle of the solution and wash out the spot in the liquid; then rinse in clear water, and dry in the air. See Cleansing Pencil.

Silk, Satin and Similar Delicate Fabrics.—Add to the above solution the yolks of two eggs, and spread this on the spot. Then wash in lukewarm water; rinse in cold water, and dry by a gentle heat. To press out use an iron that is warm only—not hot.

Milk, Soup and Small Grease Spots Generally.

White Goods.—Wash with the warm solution of a “cleansing pencil” in water. See Cleansing Pencil.

Colored Cotton or Woolen Goods.—Dampen with a cleansing liquid or cream; remove the excess of the solution by means of blotting paper, and wash with a solution of a “cleansing pencil.”

Silk, Satin, Etc.—Dampen by means of a sponge soaked in cleansing liquid, removing any excess by means of blotting paper.

Grease, Paint, Varnish, Etc.

White or Colored Woolens or Cotton Goods.—Moisten several times with a cleansing liquid, lay a piece of blotting paper over the spot and press this with a hot iron. Then wash the whole of the fabric in hot soap suds.

Silk, Satin and Delicate Fabrics.—Rub up some “white bole” or talcum to a thin dough with a cleansing liquid, and spread over the spot. When thoroughly dry brush off and wipe with dry bread crumbs.

When the Spots are Old.—First moisten with chloroform and then proceed as above.

Stearin, Wax, Etc.

First remove as much as possible with a knife; then lay a damp towel under the spot and put several thicknesses of blotting paper over it and press out with a hot iron. If any stain remains after this, treat as directed under butter, grease, etc.

Resin, Tar, Axle Grease, Etc.

White Goods.—Wet with good oil of turpentine, wring out, cover with blotting paper, and go over with a hot iron. Then wash in warm soap suds.

Colored Cotton or Woolen Goods.—Moisten the spot, apply butter, soap thoroughly, allow to stand for a few minutes, and then wash with oil of turpentine and hot water alternately. If this does not help, spread over the spot

the yolk of an egg previously mixed with oil of turpentine; cover with blotting paper and press with a hot iron. Then scratch off the residue and wash thoroughly. As a final resort, wash out in water slightly acidulated with hydrochloric acid.

Silk, Satin, Etc.—Drench with chloroform, and, when this has evaporated, apply white bole or talcum; cover with blotting paper, and press with hot iron. If this does not help, mix some yolk of egg with chloroform and proceed as above, removing the residue by wiping off with bread crumbs.

Vinegar, Acid, Wines, Fruit, Etc.

White Goods.—Wash out with clear water to which a little “cleansing liquid” has been added.

Colored Goods, Whether of Cotton, Wool or Silk.—Moisten with a cleansing liquid, allow to evaporate, and then rinse in clear water.

Acids.

Fresh spots may be removed by putting on a drop of a cleansing liquid; old spots cannot be remedied.

COLORED Fruit Stains from Peaches, Red Wine, Cherries, Strawberries, etc.

White Goods.—Dip in Javelle water or solution of chlorinated soda, and immediately that the stain has disappeared wash thoroughly in clear water.

Colored Cotton or Woolen Goods.—Wash with hot soap suds, to which a smaller or larger quantity of Javelle water or solution of chlorinated soda, has been added (as the fabric is more or less delicate); rinse in water to which a little cleansing liquid has been added; finally, wash in a large quantity of clear water.

Silk, Satin, Etc.—Follow directions as above, save to use very dilute solutions.

Grass Stains.

White Goods.—Wash out with boiling water.

Colored Goods, Whether of Cotton, Wool or Silk.—Moisten the spot with a

very dilute solution of tin chlorid, and then wash thoroughly in a plentiful supply of clear water.

STAINS from Tannin, Green Nuts, etc.

Treat with very dilute Javelle water, or solution of chlorinated soda.

Coffee or Chocolate Stains.

Cover the spot with yolk of egg diluted with a cleansing liquid; wash out in warm water, and iron, while still moist, on the wrong side of the cloth.

Aniline Ink Stains.

White Goods.—Wash with alcohol to which a little acetic acid has been added, and then bleach with Javelle water or solution of chlorinated soda.

Colored Goods, Whether Cotton, Wool or Silk.—If the color admits of it, follow the directions for white goods. If the dye is too delicate for this, wash out with strong alcohol alone, as nothing else will prove of benefit.

See also Ink Erasers; Silver Nitrate Stains, To Remove; and Rust Stain Removers.

STAINS FROM THE HANDS, To Remove.

When the hands have been stained by strong alkaline solutions, they should be washed in some dilute acid, nitric, oxalic, or acetic (1 to 100 of water). If soap without water is then immediately applied, fatty acids are deposited in the skin, which thus becomes less liable to crack. The effects of the lime solutions and also of strong ammonia may be prevented in the same way. After using mineral acids the hands should be washed with water and rubbed while wet with a piece of soap. If the acid is strong or has affected a large surface, the hands should be bathed, after washing, in a weak solution of soda (1 to 100). Strong sulfuric acid is first to be washed off as far as possible with plenty of water, after which soap should be employed as previously directed. If water is used abundantly there is no danger of too much heat being evolved.

When the acid has caused severe burns, the affected parts may be covered with a paste composed of magnesia, magnesium carbonate, or sodium bicarbonate with a little water. Nitric acid is removed by the same process. Burns by this acid, especially when treated with alkaline agents, are apt to leave behind a yellowness of the affected integument. Nitric acid destroys the epidermis so quickly that it can scarcely ever be restored to a normal condition, and this is true also of the fumes of nitric acid, nitromuriatic acid, bromine and chlorine. Iodine stains should be treated with a solution of sodium hyposulfite (1 to 10 of water). When the hands have been exposed for a long time to the action of carbolic acid, wash them first with alcohol, which may be used several times over for this purpose, and then with soap, after which, without being first dried, they may be rubbed with wool-fat. After working with sublimate solutions it is best to bathe the hands for some time in a solution of common salt (1 to 50 of water), followed by soap and wool-fat.

Potassium permanganate stains may be removed by rubbing with a solution of oxalic acid, then washing in water, slightly acidulated with sulfuric acid.

Potassium bichromate stains may be removed by treating them with a strong solution of sodium hyposulfite, slightly acidulated with sulfuric acid. The same effect may be obtained by touching with sulfurous acid and then washing in rain or distilled water.

See also Walnut Stains, To Remove.

STAINS FOR WOOD.

By wood stains are understood solutions of dyes, etc., used for coloring wood. They are fixed on the wood either direct or through the medium of some mordant. In many cases the color is only developed in the grain after the mordant is applied; sometimes the mordant merely changes the tone of the color.

The action of the stain is influenced

have been very kind to send me so many samples. I consider it a pleasure to speak a good word for Iodex. It is not an experiment with me. I use it with confidence and get results. Use it in preference to all other ointments, wherever a penetrating, healing and soothing application is indicated. Inflammations, cuts, bruises, ulcers, boils, carbuncles or any old sore. Glandular enlargements of all kinds, especially Goitre. Can't beat it for enlarged prostate; apply locally and massage in good by way of the rectum. Also good for hemorrhoids and fissures, ulcers of cervix and lacerations; for rheumatic joints, lumbago,—anything on that line, I use the Iodex cum Methyl Sal—use it thorough, and get results. Its uses are legion. Best wishes, P. H., M.D., Ohio. Sept. 1923.

* * *

GENTLEMEN :—There are so many uses I find for Iodex I hardly know where to start. I have found it of great service in adenitis wherever located. In combination with high frequency electricity, I have cured many cases of goitre in young people before fibrosis has occurred. In sprains and contusions, as a dressing after massage or electricity, and in indolent ulcers of the leg. I conduct a clinic. The nurse who helps me swears by it for acute colds and catarrhal conditions of head and throat. Yours truly, N. S., M.D., Pa. Sept. 1923.

* * *

To Remove Drug Stains from Skin and Linen. For iodine, moistening with ammonium or sodium thiosulphate. For silver nitrate, washing with a 10 per cent. solution of potassium cyanide or 10 per cent. potassium iodide. The yellow silver iodide spots are removed with sulphurous acid. Ten parts each of mercuric chloride and ammonium chloride in eighty parts water will clear the skin of silver nitrate spots. For chrysarobin, rub with benzol (benzene). For resorcin, weak citric acid. For picric acid, leave the spot in contact with potassium sulphate for one minute, then wash with abundance of soap and water. Or apply a paste of magnesium carbonate in water to the spot and after a time rub it off. Old pyrogallol spots cannot be removed. More recent spots can be treated by warming in contact with a 10 per cent. solution of iron sulphate until it turns a bluish black; then apply water freely and afterward a solution of an oxalate, rinsing abundantly. The procedure has to be repeated. For coal tar colors, spirit of soap. Argyrol stains, if fresh, may quickly be removed by dropping upon the stains a small quantity of 1:500 solution of mercuric chloride, and then rinsing thoroughly in fresh water. Old stains, or those which have been acted on by light, may also be removed by this treatment. If the stains persist apply H_2O_2 with ammonia water.

not only by the mordant but also by the natural constituents of the wood, as tannin for instance. Consequently different woods sometimes give entirely different results with a certain stain. All the stains here given have been tried with oak, cherry, white beech, red beech, maple, ash, birch, linden, poplar, fir and pine. Practical utility can best be served by designating the mordants and color solutions with letters and figures respectively and combining them in a tabular form under the colors.

A more definite nomenclature of the colors is impracticable because of the variations of color and tone produced on the different woods. Moreover the age of the wood to be stained and other circumstances enter into the matter of color.

Mordants.

(a) Iron acetate solution.

The following consists of solutions of the substance and quantity named in 100 parts of water: (b) 2 parts of potassium bichromate; (c) 1 part of copper sulfate and 1 part of potassium chlorate; (d) 1 part of barium chlorid; (e) 1 part of calcium chlorid; (f) 2 parts of magnesium sulfate; (g) $2\frac{1}{2}$ parts of manganese sulfate; (h) 3 parts of chrome alum; (i) 1 part of iron chlorid; (k) 2 parts of iron sulfate; (l) 2 parts of copper sulfate; (m) 2 parts of tin chlorid; (n) 3 parts of alum.

Coloring Solutions.

1. Dissolve 20 parts of logwood extract in 80 of water.

2. Dissolve 10 parts of logwood extract in 90 parts of water.

3. Dissolve 20 parts of aniline chlorid in 80 parts of alcohol.

4. Rub 10 parts of Cassel brown with 30 parts of 10% ammonia water, put in a bottle and allow to stand corked for 24 hours. Then add 50 parts of water and 10 parts of alcohol. Allow the mixture to stand for several days and then filter.

5. Boil 5 parts of caustic potassa and 10 parts of Cassel brown with 50 parts of water for about half an hour, cool, add sufficient water to bring up to 90 parts by weight, and then add 10 parts of alcohol.

6. Triturate carefully 5 parts of alizarin with 100 parts of water and add sufficient ammonia water to make solution smell strongly of ammonia.

7. Mix 1 part of alkannin, 10 parts of alcoholic extract of red saunders, 10 parts of dragon's blood and 180 parts of alcohol, and filter.

8. Dissolve 5 parts of alcoholic extract of red saunders and 10 parts of aloes in 85 parts of alcohol and 2 parts of 15% soda solution (sp.gr. 1.17).

9. Dissolve 1 part of gallic acid in 100 parts of water.

10. Dissolve 1 part of water-soluble nigrosin in 140 parts of water.

Before applying a stain, the wood should be smoothed by sandpapering. After applying the stain the wood should be polished so as to "bring out" the stain.

Other formulas are mentioned below. See also the somewhat similar preparations under the heading Varnish Stains.

Some years ago a patent was issued to a German firm for making wood stains from coal-tar dyes dissolved in benzole, oil of turpentine, and similar solvents. These stains, unlike water and spirit stains, do not raise the grain of the wood, so that the usual subsequent process of smoothing is entirely obviated, and any desired shade of color may be obtained by one or two applications.

Black or Ebony Stain.

Use No. IV in the above table, or one of the following:

I.

Solution A.

Sodium or potassium chlorate	av.oz. 1
Copper chlorid	av.oz. 1
Water	fl.oz. 15
Mix and dissolve.	

Solution B.

Aniline chlorid	av.oz.	2½
Water	fl.oz.	15

Mix and dissolve.

The dry wood is painted three times with the above solutions, applying them alternately; before each application the wood is well dried; finally, it is rubbed with linseed oil or a mixture of turpentine and wax, and polished. The color is not affected by acids or alkalis.

If aniline chlorid be not at hand, use instead 2 av. ounces of aniline oil, 3 av. ounces of hydrochloric acid, and 15 fluidounces of water.

This is similar to the procedure mentioned under Table Tops, To Make Acid-Proof, which see.

Cherry Stain.

Light-colored woods may be stained in imitation of cherry by the use of these solutions.

III.

Annatto	av.oz.	4
Caustic potassa	av.oz.	1
Water	fl.oz.	48

Boil until the annatto is dissolved.

IV.

Logwood chips	av.oz.	8
Caustic potassa	av.oz.	1
Water	fl.oz.	32

Boil until the color is extracted, adding more water from time to time, to make up for the loss by evaporation.

The stain is to be "fixed" by washing the wood, after its application, with alum water.

Mahogany Stain.**V.**

Madder	av.oz.	2
Logwood chips	av.oz.	½
Water	fl.oz.	32

Boil together, then strain.

This is to be applied to wood while hot and mordanted with an aqueous solution of potassium carbonate, 1 dram to the pint.

VI.

Alkanet	av.oz.	½
Aloes	av.oz.	1
Dragon's blood	av.oz.	1
Alcohol	fl.oz.	16

Reduce the drugs to coarse powder; mix with the alcohol, set the whole in a warm place for 3 or 4 days, agitate occasionally, and filter. Before applying, mordant with dilute nitric acid.

VII. This is said to be used by French workmen: Make the wood perfectly smooth, then apply dilute nitric acid, rubbing well into the fiber, and allow to dry. Then macerate 1½ av.oz. of dragon's blood with 16 fluidounces of alcohol for several days, agitating occasionally, filter, and to the filtrate add ½ av. ounce of sodium carbonate. Paint the mixture on the mordanted wood several times until the desired color is obtained. If the color becomes dimmed, linseed oil is to be rubbed into the wood.

Oakwood Stain.

VIII. First apply to the wood a 15% solution of soda and allow to dry. Then make a strong solution of catechu in water, about 1 in 3, by boiling with water, to a pint of liquid add ½ ounce of iron-free alum, and apply this liquid, preferably hot, to the prepared wood. Finally, when dry, mordant the wood with a 5% solution of potassium bichromate.

Purple Stain.**IX.**

Logwood chips	av.oz.	8
Potassium carbonate	av.oz.	2
Indigo, powder	av.oz.	1
Water	fl.oz.	48

Boil the logwood with the water till well exhausted, adding water from time to time to restore that lost by evaporation, strain, and to the liquid add the other ingredients.

Walnut Stain.**X.**

Potassium permanganate	av.oz.	½
Distilled water	fl.oz.	16

Apply twice in succession, and after an interval of 5 minutes wash with clear water.

A strong hot decoction of green walnut shells may also be applied, followed, when partially dry, with a concentrated solution of potassium bichromate.

STAMPING INKS.

See Inks, Stamping.

STAMPING PREPARATIONS.

These are employed for stamping embroideries, etc. Powders of various colors are rendered adhesive by admixture with gum resins, such as resin, copal, damar or sandarac. The substances should be made into the most impalpable power by trituration and sifting.

The method employed for stamping is to perforate paper according to the pattern desired, then placing this upon the fabric, sprinkling or rubbing the powder into the perforations (carefully removing the pattern), placing a piece of unperforated paper on the cloth, and carefully passing a hot iron over the whole. The iron melts the resin and leaves the design imprinted on the material.

I. Mix equal parts powdered resin and a pigment—ultramarine or Prussian blue for blue; zinc oxid or flake white for white; chrome yellow for yellow; burnt or raw umber, burnt or raw sienna, Vandyke brown, etc., for brown; ivory black for black, etc.

II.

Resin,
Damar resin,
Copal resin,
Sandarac,
Pigment, each, equal parts.

Reduce each to very fine powder, and mix well.

III. For stamping fabrics liable to be injured by heat, it is suggested to mix the above powders with enough alcohol and using this with a brush like a stencil ink. It is said that a tinted starch paste is also used for this purpose.

STARCH OR LAUNDRY GLOSS.

(Starch Polish or Polishing Starch.)

Many women impart a suitable polish to the laundry by adding either borax or paraffin to the starch, but in many cases other prepared compounds are used, such as those mentioned here. These may be in the form of cake, powder or liquid.

Cake Form.

I. Instead of plain paraffin, the following may be used:

Stearin, pureav.oz. 4
Paraffinav.oz. 6

Melt together, pour into molds to solidify, and then cut into cakes weighing about $\frac{1}{4}$ ounce each.

In using, make a starch paste, say from one pound of starch, add one of these pieces and leave in the mass during a few minutes' boiling. When using unboiled starch paste, a small quantity of a hot solution of starch containing the gloss is applied to a rag and the latter gently rubbed over the fabric just before ironing.

II.

Stearic acid (stearin).....av.oz. 16
Absolute alcoholfl.oz. 1

Melt the acid, add the alcohol, and form into broad rectangular blocks, which may be wrapped in tin-foil and parchment paper.

In using, starch the goods in the usual manner, pass the hot iron over the stearin block, and iron rapidly in the usual manner; a brilliant polish will be produced. The irons must be well cleaned when the ironing is completed as the acid will eventually rust the metal of the irons.—D.

Powders.

III.

Boraxav.oz. 4
Gum arabicav.oz. 1
Use both in powder and mix well.

IV.

Spermaceti, powdered.....av.oz. 2
Gum arabic, powder.....av.oz. 2
Borax, powderav.oz. 3

A tablespoonful of this mixture is to be added to about 1 pint of boiled starch while this is being prepared.

Spermaceti is readily reduced to powder by trituration in a mortar, while keeping it moistened with a few drops of alcohol.

V.

Spermaceti, powderav.oz. 2
Gum arabic, powder.....av.oz. 2
Borax, powderav.oz. 3

White resin, powder.....dr. 2
Prepare and use like the preceding.

VI.

Soap, powderav.oz. 1
Talcum, powderav.oz. 3

Apply this mixture to the right side of the starched article by means of a flannel rag and then iron in the usual way.

Liquids.

VII.

Spermacetiav.oz. $1\frac{3}{4}$
Acaciaav.oz. 1
Boraxav.oz. 1
Glycerinfl.oz. $2\frac{1}{2}$
Distilled waterfl.oz. 15

Heat together with constant stirring until complete solution is achieved. Let cool, and fill into suitable bottles, which must be well stoppered.

Directions: Take 1 ounce of good starch, and add just enough cold water to make a paste, carefully rubbing with a spoon until all lumps are broken down. To 1 pint of boiling water add 5 table-spoonfuls of this liquid, pour the whole over the starch paste, and boil for not less than half an hour.

These proportions are intended for collars, cuffs, and fine shirt-bosoms. For other articles less of the liquid is required.

STORAGE BATTERIES, To Make.

See Batteries, Storage.

STORM GLASS SOLUTION.

See Barometer Glass, Solution for.

STOVE POLISH OR BLACKING.

I. Plumbago made into a thin paste with solution of sodium silicate or water glass.

This makes an excellent stove polish and should be brushed thoroughly.

II. Reduce graphite to an impalpable powder by grinding in a mill with water, and then dry.

Use this with water first, then allow to dry and polish with a brush.

This is the base of nearly all commercial stove polishes,

III.

Bone blackav.oz. 8
Plumbagoav.oz. 8
Copperasav.oz. 2
Watersufficient

Dissolve the copperas in the smallest possible amount of water, strain the solution through cotton, and incorporate the previously mixed and sifted powders.

The copperas makes the polish more lasting. This paste should be put up in tin boxes.

IV.

Graphiteav.oz. 10
Soot or lampblack.....av.oz. 2
Copperasav.oz. 4
Glycerin, water, each.....sufficient

Prepare like the preceding, using a mixture of 1 part of alcohol and 2 parts of glycerin as the solvent.

The so-called Ceylon graphite is considered the best. Of the soots, so-called American gas black is the best for the purpose, while if bone black be used this should be of the best quality and be deprived of calcium phosphate by treatment with hydrochloric acid.

V.

Bayberry waxav.oz. 1
Mineral oilfl.oz. 13
Plumbago, fine powder....av.oz. 25
Oil of lavender.....fl.dr. 1

Melt the wax, add the mineral oil, thoroughly incorporate the plumbago, and finally incorporate the oil of lavender.

This is said to be used in France for polishing fine heating apparatus.

VI. This is said to make an excellent liquid stove polish.

Graphite, fine powder....av.oz. 4
Lampblackav.oz. $\frac{1}{4}$
Rosinav.oz. 1
Oil of turpentine or gasolinefl.oz. 32

Mix thoroughly.

This mixture should be kept well shaken while in use, and must not be applied when there is a fire or light nearby. On this account it cannot be used on a stove with a fire in it.

STOVEPIPE ENAMEL.**I.**

Asphaltum	av.oz. 8
Linseed oil, boiled.....	av.oz. 4
Oil of turpentine.....	fl.oz. 16

Melt the asphaltum in an iron pot, add the linseed oil, and bring to a boil. Allow to cool sufficiently and then incorporate the oil of turpentine.

II.

Shellac	av.oz. 6
Venice turpentine	av.oz. 2
Sandarac	av.oz. 1
Aniline black	dr. 3
Oil of turpentine.....	fl.oz. 3
Wood alcohol	fl.oz. 54

Mix and dissolve by agitation, then decant the clear liquid.

This will stand a higher heat than asphaltum and is therefore suitable for stove pipes, steam radiator, and similar articles.

STOVEPIPES, To Free from Soot.

Stovepipes may best be cleared of soot by frequently (every few days) throwing strips or pieces of zinc on the hot fire and opening the draught in the chimney.

See also Chimney Cleaners.

STRAW HAT CLEANERS.

These are now usually put up in the form of powder contained in little envelopes. This powder is frequently oxalic or tartaric acid; the latter is to be preferred on account of its non-poisonous character. One dram is to be put up in each package. Other powdery mixtures for the same purpose are the following:

Powders.**I.**

Sodium bisulfite	av.oz. 5
Tartaric acid	av.oz. 1
Borax	av.oz. ½

Mix and put up in packages of half an ounce each. The directions for use are to moisten a small quantity of the powder with water and apply this with a wetted tooth brush to the hat.

II. Potassium oxalate, or a mixture of equal parts of potassium bitartrate and oxalic acid may be used for this purpose.

III. Sodium perborate is also an excellent hat bleach and cleaner. In using, add about a teaspoonful to 2 fluid-ounces of warm water, sponge the hat with this liquid, rubbing in thoroughly, then wipe off with a sponge that has been dipped in the solution and then squeezed out. Then apply a weak solution of oxalic or tartaric acid, which is to be allowed to remain for a short time when it is to be washed off and the hat allowed to dry.

Liquids.

See the preparation mentioned under the heading Panama Hats, To Clean, or use the following:

IV. The simplest method is to brush well with dilute ammonia water or weak solution of potassa, then a liberal application of hydrogen peroxid. This is easier to use and is said to be more satisfactory than bleaching with sulfur.

V. Sodium dioxid (or peroxid) may also be used as a hat bleach, first washing with a solution in warm water, then wiping repeatedly with the same solution to which more and more oxalic acid has been added until the liquid is decidedly acid. The alkaline solution will make the straw yellow but as acid is added to the liquid the light color will be restored. Finally, rinse the hat with clear water, and dry it.

STRAW HAT VARNISH.

If a simple waterproof application is desired, apply one of these varnishes, but if a color or dye is wanted, add some aniline dye, sufficient to give the desired tint. For white straw hats, which are to remain uncolored, white shellac should be used in these formulas.

I.

Shellac	av.oz. 4
Sandarac	av.oz. 1½
Venice turpentine	av.oz. ½
Castor oil	fl.dr. 1
Alcohol or wood alcohol.....	fl.oz. 16

Mix and dissolve by agitation.

II.

Shellac	av.oz. 5
Rosin	av.oz. 1

Venice turpentineav.oz. 1
 Castor oilfl.dr. 1
 Alcohol or wood alcohol...fl.oz. 17
 Mix and dissolve by agitation

SULFUR STRIPS.

These are made by cutting thick paper into strips and passing through melted sulfur. Cloth strips may be substituted for paper. The temperature must not be too high and care must be taken not to allow the sulfur to ignite. If the first coat is not thick enough, the strips may be dipped a second time.

SWEEPING COMPOUNDS.

According to a patent issued in 1905, this is composed of sawdust, silicious material, rosin, oil, and tar. Another patent calls for catechu, 1 part, mineral oil, 8 parts, sawdust, 16 parts, bran, 32 parts, sand, 48 parts, and water containing a small amount of nitrobenzene, 32 parts.

This is offered as a good formula:
 Paraffin waxav.oz. 1
 Paraffin oilpints 2
 Saltav.oz. 4
 Sea sandlb. 4
 Sawdustlb. 5
 Oil of eucalyptusfl.oz. 1

Melt the wax, add the paraffin oil, incorporate the sand, salt, and sawdust, and finally add the oil of eucalyptus.

SYRINGES, HYPODERMIC, To Clean.

See under heading Hypodermic Syringes.

TABLE TOPS, To Make Acid-Proof.

Table and counter tops, such as the tops of laboratory tables and prescription counters, may be rendered acid-proof by the following treatment:

Scrape off the old paint and varnish and scrub thoroughly, then brush on a solution composed of

Iron sulfateav.oz. 1
 Copper sulfateav.oz. 1
 Potassium permanganate .av.oz. 2
 Water, to make.....fl.oz. 24

When the first coat is dry, apply another coat, and when this is dry, apply in the same manner two coats of this liquid:

Anilinfl.oz. 2
 Hydrochloric acidfl.oz. 3
 Water, to make.....fl.oz. 17
 Or use 2½ ounces of anilin hydrochlorid in enough water to make 17 fluidounces.

Finally, when the table top is dry, apply a thin coating of raw linseed oil.

The wood assumes an ebony black color, which may be objectionable. The table top may also be rendered acid-proof by first cleaning and scrubbing it, allowing it to dry, and then rubbing in melted paraffin, or the paraffin may be dissolved in gasoline and several coats of this solution may be applied with a brush.

The first mentioned preparation is similar to that mentioned under No. 1 ebony stain under Stains for Wood. This latter will also render table tops acid-proof.

TABLEAU LIGHTS.

See Fires, Colored.

TAR STAINS, Removal of.

See under Stains from Fabrics, Removal of.

TATTOO MARKS, To Remove.

These are said to be removed by the following plan: Wash the part thoroughly with diluted acetic acid, half an hour after which apply the following:

Caustic potashgr. 4
 Waterfl.oz. 1

After the lapse of another half hour use

Diluted hydrochloric acid...fl.dr. 1
 Waterfl.oz. 1

This should be repeated daily. Stronger solutions may be applied, if necessary, if they can be borne by the patient.

TELEPHONE SOLUTION.

The formula used by the Department of Public Charities (New York) to prepare a solution for scrubbing the mouth-pieces of telephones is as follows:

Thymolm. 15
 Oil of pinus sylvestris.....m. 15
 Oil of peppermint.....m. 15

Alcohol	f.dr.	2
Tincture of green soap.....	f.dr.	4
Water, to make.....	f.oz.	16

In the city hospitals of New York the mouth-pieces are "scrubbed" with the above solution once a week.

TIN CONTAINERS, To Stick Labels on.

See Paste to Stick Labels on Tin.

TIN PLATING.

See Plating with Gold, Silver, Tin, etc.

TONING SOLUTIONS for Photography.

I.

Gold chlorid	gr.	2
Sodium acetate	dr.	1
Distilled water	f.oz.	16

Mix and dissolve. Let stand for 1 or 2 days before using.

The following are combined toning and fixing solutions:

II.

Gold chlorid	gr.	8
Ammonium chlorid	gr.	15
Silver chlorid	gr.	50
Sodium acetate	dr.	2
Ammonium sulfocyanid	dr.	4
Sodium hyposulfite	oz.	4
Distilled water	f.oz.	20

Dissolve the gold and ammonium chlorids in 4 fluidounces of water and the sodium acetate and hyposulfite and ammonium sulfocyanid in the remainder of the water, mix the two solutions, and finally add the silver chlorid.

III.

Gold chlorid	gr.	2
Lead nitrate	dr.	2
Lead acetate	dr.	2
Citric acid	dr.	2
Ammonium sulfocyanid	oz.	1
Sodium hyposulfite	oz.	8
Distilled water, hot.....	f.oz.	32

Dissolve the solids, except the gold chlorid, in the water, filter the liquid until clear, then add the gold chlorid.

TOOTH CEMENTS.

See under heading Cements.

TRACING PAPER.

See Paper, Tracing.

TYPEWRITER RIBBONS.

See under heading Ink for Typewriter Ribbons.

VARNISHES.

These, like lacquers, are resinous solutions intended as protective applications to metals, wood, etc.

See also the Lacquers.

Amber Varnish.

I.

Amber	av.oz.	8
Oil of turpentine.....	f.oz.	9
Linseed oil varnish.....	f.oz.	6

Melt the amber in a closed vessel (out of contact with the air) over a naked flame, allow to cool somewhat, dissolve in the oil, and finally add the varnish.

D.

II.

Amber	av.oz.	6
Linseed oil, clarified.....	f.oz.	16
Oil of turpentine.....	f.oz.	32

Heat the amber, add the linseed oil, boil until it "strings" well, allow to cool somewhat, then incorporate the oil of turpentine.

When required to dry and harden quickly, driers may be added during the boiling.

Anatomical Varnish.

III.

Mastic	av.oz.	3
Sandarac	av.oz.	8
Camphor	dr.	2
Venice turpentine	av.oz.	$\frac{3}{4}$
Alcohol	f.oz.	28
Mix and dissolve.		

This is used for dry anatomical specimens.—H.

Aromatic Varnish.

IV. This is suitable for fan boxes, handkerchief cases, glove boxes, etc.:

Storax	dr.	1
Peru balsam	dr.	1
Tolu balsam	dr.	1
Extract of licorice.....	dr.	1
Aloes	dr.	2
Myrrh	dr.	2
Gum olebanum	av.oz.	$\frac{1}{2}$
Mastic	av.oz.	2
Benzoin	av.oz.	3
Tincture of cinnamon.....	f.dr.	4
Alcohol	f.oz.	32

Reduce the solids to coarse powder, mix all the ingredients, macerate for 7 days, agitating frequently, and then filter.

Asphalt Varnish.

V.

Asphaltumav.oz. 8

Oil of turpentine.....sufficient

Melt the asphaltum over a direct flame, allow to cool, reduce to coarse powder, and dissolve in enough oil to make a total weight of 20 av. ounces.

The asphalt may also be dissolved in oil of turpentine without the preliminary fusion but the product will make a sticky coating.—D.

See also the similar "black varnish."

Black Varnish.

Linseed oil varnish.....fl.oz. 10

Burnt umberav.oz. 2

Asphaltum, powder.....av.oz. 4

Oil of turpentine.....sufficient

Heat the first three ingredients until the asphaltum is dissolved, then remove from the fire and add oil of turpentine until the liquid is of proper consistency.—H.

See also the similar preparation under the head Bicycle Paint; also the similar "asphaltum varnish."

Bookbinders' Varnish.

VII.

Shellacav.oz. 4

Benzoinav.oz. 1½

Sandaracav.oz. 1

Masticav.oz. 1

Oil of lavender.....fl.dr. 2

Absolute alcoholfl.oz. 24

Mix, macerate for some time, agitating occasionally; decant the clear liquid, and filter.—H.

VIII.

Shellacav.oz. 4

Benzoinav.oz. 2

Masticav.oz. 1

Venice turpentinedr. 3

Alcoholfl.dr. 20

Macerate a few days, agitating occasionally, and filter.—H.

Celluloid Varnish.

IX.

Pyroxylin (soluble gun cotton)dr. 2

Etherfl.oz. 5

Alcoholfl.oz. 10

Camphordr. 1

Pour the ether over the pyroxylin, add the alcohol and finally add the camphor, and dissolve by agitation.

This varnish may be colored by the addition of anilines. It is particularly adapted for covering paper labels.—D.

A mixture of amyl acetate and wood alcohol may be used as the solvent.

Or dissolve 2 parts of celluloid in 20 parts of acetone without heat, agitating frequently, then add 78 parts of amyl acetate, and set aside to clarify.

This is similar to Banana Oil, which see.

Varnish for Chocolate Candy.

X.

Sumatra benzoinav.oz. 1

Shellacav.oz. 1

Vanillingr. 6

Alcoholfl.oz. 14½

Dissolve the first three ingredients in the alcohol; filter, and pass enough alcohol through the filter to make the filtrate measure 16 fluidounces.—D.

Colorless Varnish.

XI. Any of the colorless varnishes mentioned here may be used, such as celluloid varnish. The following is known as Luning's varnish:

Shellac, whiteav.oz. 2½

Alcoholfl.oz. 16

Animal charcoal, well burnt and recently heated.....av.oz. 5

Dissolve the shellac in the alcohol by agitation, boil for a few minutes with the charcoal, and then filter.

This is useful for drawings and all kinds of fine work.

XII.

Sandaracav.oz. 2

Chloroformfl.dr. 4

Oil of lavender.....fl.oz. 1

Alcoholfl.oz. 10

Mix and dissolve by agitation. Allow to stand until clear.

XIII.

Dammarav.oz. 3

Acetonefl.oz. 14

Prepare like the preceding.

Copal Varnish.

XIV.

Copal resinav.oz. 16
 Linseed oilfl.oz. 12
 Oil of turpentine.....fl.oz. 12

Melt the copal; add the linseed oil, and when nearly cool add the oil of turpentine.

XV.

Copal resinav.oz. 13
 Oil of turpentine.....fl.oz. 15
 Linseed oil varnish.....fl.oz. 10

Melt the copal slowly, out of contact with the air, over a naked flame; then pour into a flat dish, allow to cool, and dissolve in the oil by the aid of a gentle heat; finally add the varnish.—D.

Dammar Varnish.

XVI.

Dammar resinav.oz. 8
 Oil of turpentine.....fl.oz. 13

Melt the resin carefully over the direct flame; allow to cool, reduce to coarse powder, and dissolve in the oil.

This varnish may be prepared by dissolving the resin without the preliminary fusion, but the product will always be sticky.—D.

French Varnish.

XVII. This is a name applied to colored spirit varnishes made from 1 part of bleached or orange shellac dissolved in 5 parts of alcohol. Wood or denatured alcohol may be used instead of alcohol. Allow the liquid to stand and decant the clear portion.

To make red varnish, use 1 part of eosin to 49 parts of bleached shellac solution. For blue, use 1 part of aniline blue to 24 parts of bleached shellac solution. For yellow, use 1 part of gamboge to 24 of the solution or 1 part of aniline yellow (alcohol-soluble) to 49 parts of the solution. For golden yellow, use 2 parts of gamboge and 1 part of dragon's blood to 47 parts of orange shellac solution. The gamboge and dragon's blood should first be reduced to coarse powder and shaken with some alcohol before adding to the shellac solution. For green, use 1 part of aniline

green to 49 parts of orange shellac solution.

Furniture Varnish.

XVIII.

Shellacav.oz. 16
 Resinav.oz. 1
 Alcoholfl.oz. 48
 Venice turpentineav.oz. 3
 Talc, powderav.oz. 2

Warm the shellac and resin; add the alcohol, and finally, the turpentine and talc. Shake vigorously for several minutes and stand in a cool place. After 8 days filter through a filter which has been previously wetted with alcohol.—D.

Grecian Varnish.

XIX.

Balsam of fir.....av.oz. 6
 Oil of turpentine.....fl.oz. 2
 Alcoholfl.oz. 4
 Mix and dissolve.

Green Varnish for Metal.

XX. Dissolve 10 parts of sandarac and 3 of mastic in 20 parts of a 30% solution of soda, dilute with 100 parts of cold water, and then add a solution of 10 parts of pure ferrous sulfate and 8 of copper acetate in 200 parts of water. Allow the precipitate to subside, collect it, wash with cold water, and dry it. Then reduce to powder and dissolve in oil of turpentine, thin solution of rosin, or copal varnish.

Label Varnish.

XXI.

Sandaracav.oz. 3
 Masticav.oz. $\frac{3}{4}$
 Venice turpentinedr. 2
 Alcoholfl.oz. 16

Macerate with repeated stirring until solution is effected, and then filter.

Paper labels are first sized with diluted mucilage, then dried, and finally coated with this varnish. If the labels have been written with water-soluble inks or color, they are first coated with two coats of collodion, and then varnished.—D.

XXII.

Shellac, bleachedav.oz. $5\frac{1}{2}$
 Balsam of copaiba.....av.oz. $\frac{1}{2}$
 Venice turpentinegr. 100
 Alcoholfl.oz. 16
 Prepare and use like the preceding.

—D.

XXIII.

Sandarac	av.oz. 1
Mastic	av.oz. 2
Camphor	av.oz. $\frac{1}{2}$
Alcohol	fl.oz. 5
Oil of turpentine, rectified.....	fl.oz. 2

Mix, macerate for several days, agitate occasionally until dissolved, then allow to stand, and decant the clear liquid.

Violin Varnish.

XXIV. This is said to make a hard and durable varnish for musical instruments:

Sandarac	av.oz. 1
Shellac	av.oz. $\frac{1}{2}$
Mastic	av.oz. $\frac{1}{4}$
Venice turpentine	av.oz. $\frac{1}{2}$
Elemi	av.oz. $\frac{1}{4}$
Alcohol	fl.oz. 14

Mix and dissolve by agitation. The mixture is to be colored light red with cochineal or darker with dragon's blood.

VARNISH REMOVERS.

See Paint and Varnish Removers.

VARNISH STAINS, Removal of.

See Stains from Fabrics, Removal of.

WALL-PAPER CLEANER.

The following are used:

I. Mix together one pound each of rye flour and white flour into a dough, which is partially cooked and the crust removed. To this 1 av. ounce of common salt and $\frac{1}{2}$ av. ounce of powdered naphthalin are added, and finally 1 av. ounce of corn meal and 1 dram of Venetian red or burnt umber. The composition is formed into a mass of the proper size, to be grasped by the hand, and in use it should drawn in one direction over the surface to be cleaned.

II.

Pumice stone, powder.....	av.oz. 4
Wheat flour	av.oz. 24
Water	sufficient

Mix the flour and pumice with water to make a stiff dough. Roll this into a round wad 2 or 3 inches in diameter and cut into 6-inch lengths. Enclose each one of these into a tightly-fitting muslin bag and close the ends by sewing. Then drop these into a pot of

water in active ebullition and let boil for $\frac{3}{4}$ of an hour to an hour. Then remove the rolls, allow to cool for about 12 hours, and take off the wrapping as well as the outer harder portion of the rolls. The softer interior part is used for cleaning purposes.

SOAP POWDERS.

See under Washing Preparations.

WASHING PREPARATIONS.

The washing preparations mentioned in this connection are such as are recommended and used for washing clothes. These may be in the form of powder or liquid.

Washing Fluids.

I. Oil of turpentine added, in the proportion of about 1 fluidounce to a boilerful of water, will assist in cleansing, bleaching and disinfecting clothes. The oil should be added to the water used for boiling. Kerosene is also good but oil of turpentine is to be preferred. This useful property of oil of turpentine is taken advantage of in some of these washing fluids.

II. The most common washing preparation in use by housewives is a mixture of 1 ounce of powdered borax, 1 ounce of salt of tartar, 2 ounces of ammonium carbonate, and a 1-pound can of concentrated lye or potash, the whole to be dissolved in 2 gallons of water. Very frequently the borax is omitted. A cupful of this solution is to be used to a boilerful of water.

Washing Powders.

Washing powders, usually sold to the consumer as soap powders, may be described in a general way as mixtures of powdered soap, with about its own weight, more or less, of sodium carbonate. Some special brands are also made, which in addition contain other detergent agents, such as ammonium carbonate, sal ammoniac or borax, while still others are found, to which filling, in the form of talc, silic, etc., has been added. The soap itself may have been made by any of the processes known—

cold, half-boiled, or boiled, settled, or boiled down—and the stock used may have been any fat, or mixture of fats, according to the grade of washing powder to be made. Here are some typical formulas:

I. Borax Soap Powder:

Curd (hard) soap, powder.	av.oz. 10
Soda ash	av.oz. 6
Sodium silicate	av.oz. 4
Borax	av.oz. 2

Each ingredient is thoroughly dried, and all mixed together by sifting.

II.

Sodium carbonate	av.oz. 12
Soap, powder	av.oz. 2
Borax, powder	av.oz. 2

III. According to Jolle's analysis, another washing powder was found to contain water, 23.37, sodium carbonate, 68.5, sodium sulfate, 1.04, sodium chlorid, 0.89, iron oxid, etc., 0.47. It is therefore a mixture of commercial sal soda and sodium hyposulfite.

WATCHMAKER'S OIL.

The following formulas are offered:

I.

Paraffin oil	fl.oz. 1
Sweet almond oil.....	fl.oz. 10
	—II.

II.

Olive oil, best.....	fl.oz. 16
Tannic acid	gr. 160
Talcum, purified	av.oz. 1
Table salt	av.oz. 2
Water	fl.oz. 16

Introduce the oil into a vessel of the capacity of 1 quart, add the tannic acid dissolved in $3\frac{1}{2}$ fluidounces of water, and agitate thoroughly until emulsified. Set the mixture aside for 8 days, agitating frequently and thoroughly; then add the talcum, shake well, and next incorporate the remainder of the water. Allow to stand for 24 hours, decant the lower aqueous layer, and wash the oil repeatedly with fresh water until the washings no longer give a reaction with solution of iron chlorid. Now pour the oil into an evaporating dish, add the salt (which must have previously been well dried and rubbed to fine powder),

stir the whole frequently during 24 hours, and filter through paper.

This oil should be introduced into amber bottles of a capacity not greater than 1 fluidounce, which should be well closed and preserved in a cool place.—D.

WATER FOR MARINE AQUARIA.

See under Sea Salt, Artificial.

WATERPROOFING CLOTH.

I. Immerse the cloth in a solution of water glass (made by mixing solution of sodium silicate with an equal volume of water) and before quite dry, immerse in a solution of alum and copper sulfate, each 1 part, in 10 parts water. Dry slowly in the air.

II. Make a weak solution by dissolving equal parts gutta percha and paraffin in benzol or carbon disulfid, in which the cloth is bathed. Care must of course be exercised in regard to fire during this operation, as well as while drying. A weak solution of wax in benzine is said to be used for the same purpose. Both should be used in sufficiently dilute solutions so that the interstices of the cloth will not be filled with the compound.

III. Dissolve 1 part alum in 5 parts boiling water and make a similar solution with lead acetate. Immerse the cloth first in the alum bath, and, after wringing slightly, in the solution of lead acetate; a double decomposition takes place, the insoluble lead sulfate and basic acetate of aluminum being formed in the fibers of the cloth. This treatment renders the cloth perfectly waterproof, and to a certain extent fire-proof, while it does not render the cloth air tight, a particular advantage in the case of garments.

Waterproofing Canvas.

IV. Dissolve soft soap in hot water and add to it a solution of iron sulfate. An insoluble precipitate is thrown down which must be collected, washed, dried, and finally mixed with linseed oil, thus forming a paint, which may be applied in the usual manner.

V.

India rubber, cut small....av.oz. 1
 Linseed oil, boiled.....fl.oz. 32
 Gold size.....fl.oz. 5

Dissolve the rubber in half the oil by the aid of heat, then add the remainder of the oil and the gold size.

Apply 2 or 3 coats, letting each one dry before applying another. Shake well before using.

Waterproofing Paper.

VI. A patent has been granted in France for waterproofing paper by the following process:

Olive oil, common.....parts 7
 Rapeseed oilparts 7
 Linseed oilparts 7
 Yellow beeswaxparts 2
 Oil of turpentine.....parts 2

Dissolve the wax in the oil of turpentine and add the other oils.

Apply this with a flat brush to either one or both sides of the paper.

VII. A waterproofing preparation for paper cartons and receptacles, patented in the United States in 1905, is composed of paraffin wax, 8 parts, paraffin oil, 1 part, Brazilian wax, 3 parts, talc, 6 parts, asbestos, 2 parts, "asbestine," 4 parts, powdered chalk, 1 part, beeswax, 1 part, bayberry wax, 1 part, petrolatum oil, 1 part, ceresin wax, 1 part, and white wax, 1 part.

Waterproofing Shoes.

See under heading Shoes. Waterproofing for.

WAX FOR FLOORS.

See Floor Wax in Powder and Floor Wax or Polish, Liquid.

WAXED PAPER.

See Paper, Waxed.

WEDGEWOOD MORTARS, To Repair.

Pieces of a wedgewood may be united by melting together equal parts of gutta percha and shellac and applying this, melted, to the edges of the broken parts before uniting them. The pieces of the mortar ought to be warmed before applying the cement.

WEED KILLERS.

To destroy weeds and grass growing in walks and similar places, sprinkle a solution of 1 pound of arsenate of soda in a gallon of water along the path. The commercial arsenate is cheap and is said to form the basis of most of the weed killers of the market.

WHALE OIL SOAP.

See Soap, Whale Oil.

WHITEWASH, To Prepare.

See Kalsomine.

WICKERSHEIMER'S FLUID.

See under Embalming Fluids.

WINDOWS, FROSTING AND STEAMING OF, To Prevent.

Frosting of windows is best prevented by some system whereby cold air is caused to circulate near the glass. When the construction of the window does not permit openings to be made at its top and bottom into the outer air, holes should be bored through the floor of the window. Under these holes a box should be built with openings into the cellar. In the box should be placed an electric fan so set as to create a current of cold air along the window glass when in action.

Frosting and steaming may to some extent be prevented with the following mixture applied to the glass:

Soft soapav.lb. 2
 Glycerinav.lb. 1
 Oil of turpentine.....sufficient

Melt the soft soap in the glycerin with the aid of a gentle heat, and add enough oil of turpentine to give the mixture the consistency of a heavy syrup.

This should be applied to the entire inner surface of the glass by using cloths saturated with it. A thin film should be left on the glass, and rubbed off and renewed as needed.

Another plan is to apply diluted alcohol containing 5 or 10% of glycerin. This will prevent steaming and subsequent frosting of show windows.

WINDOW POLISHES.**I.**

Prepared chalk	av.oz. 9
White bole	av.oz. $\frac{1}{2}$
Jeweler's rouge	av.oz. $\frac{1}{2}$
Water	fl.oz. 5
Alcohol	fl.oz. 3

Make into a smooth paste and introduce into a wide-mouth bottle.

Moisten a cloth with alcohol, place upon the window glass a quantity of the paste of about the size of a bean, and rub the latter about on the glass with the cloth until dry and the powder is removed.—D.

II.

Prepared chalk	av.oz. 4
Vienna chalk	av.oz. 3
Tripoli, fine	av.oz. 2
Castile soap	av.oz. 2
Water	fl.oz. 3

Dissolve the soap in the water by the aid of heat, adding a little more water

if necessary, then incorporate the powders, make a homogeneous mass, and form into cakes.

When using, apply this composition on a moistened cloth, then rub off with another cloth until clean and dry.

WOOD STAINS.

See Stains for Wood.

WOOD FLOORS, Polishing of.

See Floor Wax or Polish, Liquid.

ZINC, COLORING.

Clean the zinc by washing with dilute sulfuric acid, 1 to 12, followed by water and scrubbing with a wire brush. Then apply this solution:

Copper chlorid	dr. 2
Copper nitrate	dr. 2
Ammonium chlorid	dr. 2
Water	fl.oz. 16
Mix and dissolve.	

Brush this solution on the zinc and allow it to dry.

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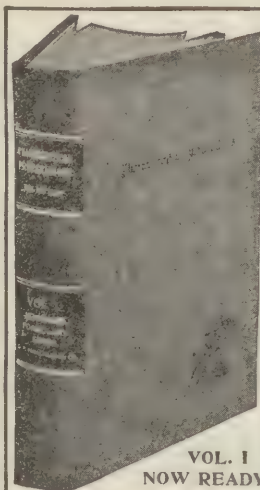
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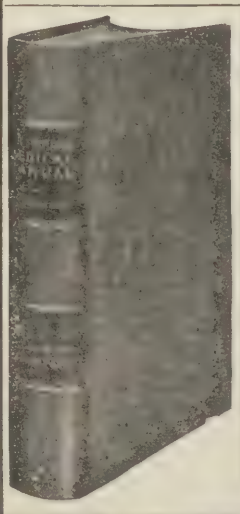
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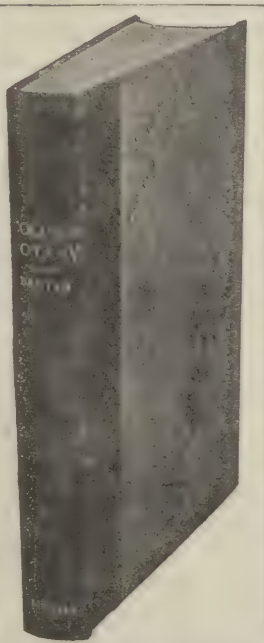
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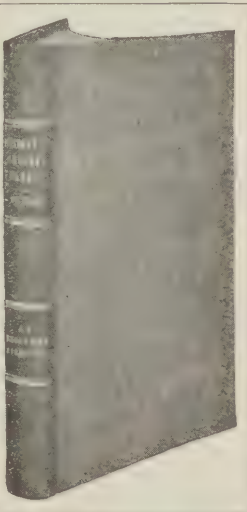
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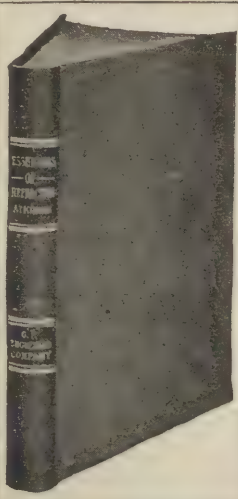
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